

MacWEEK

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IN REVIEWS

✓ **File synchronization**
Six ways to keep your docs in sync

✓ **STATUS*Mac 3.0**
New release adds software distribution

✓ **ColorAccess**
Convert RGB to high-quality CMYK

See Page 63



Macworld Expo last week drew hordes of users to check out the latest and greatest in Mac wares. For more expo photos and a reporter's view of the show, see Page 10.

Mac fans slog through flood of new products

By MacWEEK staff

San Francisco — From wireless modems to 600-dpi laser printers, last week's Macworld Expo gave the power hungry something to chew on.

Braving the rain, upward of 50,000 people streamed into Moscone Center here over four days last week to see a range of products that

reflected the sprawling reach of the Macintosh.

► **Teleconferencing.** Attendees had plenty of ways to participate in video teleconferences, including Northern Telecom Inc.'s Visit Video, Compression Labs Inc.'s Cameo Personal Video System, ShareVision Technology Inc.'s

See Expo, Page 132

News Analysis

ColorSync opens Pandora's box

By Matthew Rothenberg

San Francisco — At its Macworld Expo rollout of imaging products last week, Apple unveiled hardware and software to standardize Mac color matching. But industry sources said some gaps remain in the picture.

The company unveiled the Apple Color Printer, a \$2,349 inkjet device, and the Apple Color OneScanner, a \$1,349 one-pass flatbed model. It also introduced the LaserWriter Pro 630

and 600, 600-dpi laser printers priced at \$2,529 and \$2,099, respectively, and the \$359 StyleWriter II, a faster version of its QuickDraw inkjet printer (see MacWEEK, Jan. 4).

In addition, the company officially introduced ColorSync, its new system extension for device-independent color matching, which is available with Apple's new color devices and a variety of third-party

See Color, Page 131

Apple casting nets for diskless Macs with Startup utility

By Robert Hess

San Francisco — While many vendors here at Macworld Expo tried to convince users to buy more gadgets for their Macs, Apple was making another suggestion off the show floor: Get rid of your hard disk and let the network be your guide.

Using Network Startup for Macintosh, a utility under development at Apple, system administrators can create System-folder images from which diskless or System-less Macs on the network can start up.

"We're trying to facilitate the management of Mac networks," said Dan Torres, Apple system-software networking product manager. A standard system from which all Macs start up considerably enhances security, Torres said, making it easier for administrators to maintain a consistent and virus-free operating system.

Torres demonstrated the technology by restarting a specially configured Mac IIx without a hard disk or floppy drives. The Mac reached over the network and connected to another Mac running the Network Startup Server software, which dispatched a complete System-folder image. The usual "happy Mac" icon, minus a mouth, indicated the process was under way.

See Startup, Page 132

New Quadras to throw fast curves at high end

By Andrew Gore

San Francisco — One slogan for Apple's new line of low-cost, high-performance 68040-based systems could be "dangerous curves ahead."

Two of the three new '040 models expected to debut Feb. 10 at Macworld Expo in Tokyo — the Quadra 800 and the Centris 610 — will bring a face lift to Apple's mainstream offerings for business, sources said. Each will come in newly designed cases that reflect

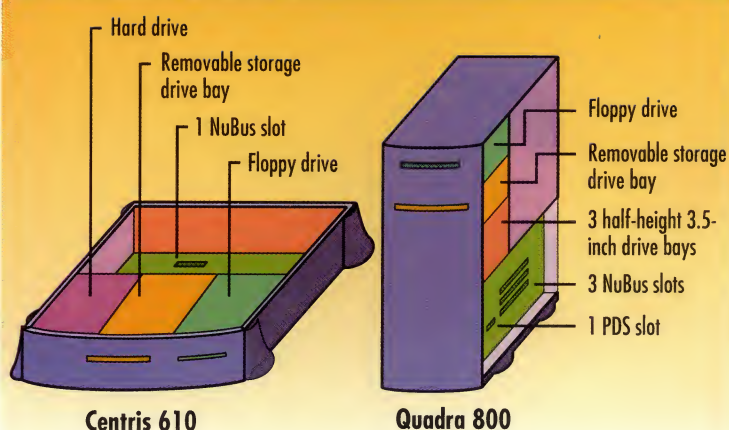
Apple's new curvaceous design philosophy: The company has stated publicly that it would be adding curves to all future designs.

The other new model, the Centris 650, will come in the same case as the Mac IIvx.

► **Quadra 800.** Apple's new "mini-tower" reportedly will deliver slightly better performance than a Quadra 950. The system features a 33-MHz '040, three NuBus slots

See Feb. 10, Page 131

Two new designs to join '040 Mac line



Apple's Heinen goes to Microsoft

Top Mac OS executive to head database unit

By Lisa Picarille and Henry Norr

Cupertino, Calif. — Roger Heinen, the man who may know more than anyone else on earth about Apple's software plans, last week defected to the company's operating system archival, Microsoft Corp.

Heinen until last Monday was senior vice president and general manager of Apple's Macintosh Software Architecture Division, which encompasses both system-software development and developer tools and support. Starting Feb. 1 he will become vice president of database

and development tools at Microsoft's Redmond, Wash., headquarters.

Michael H. Spindler, Apple president and chief operating officer, will act as general manager of MSAD until a replacement is named, the company said.

The move, which both Apple insiders and industry analysts described as a "total surprise," came just three days before Heinen was to give a keynote speech at Macworld Expo in San Francisco. Kirk Loevner, who as vice president of the Apple Developer Group had reported to Heinen, filled in at the podium.

Heinen offered no explanation for his decision and was not available for comment, but surprised

See Heinen, Page 131

MOBILE COMPUTING

Special Report

Apple's "rapid turns" PowerBook strategy, Global Village's dial-in server, ARA case studies, and problems with mobile support

See Page 49

NEWSPAPER SECOND CLASS

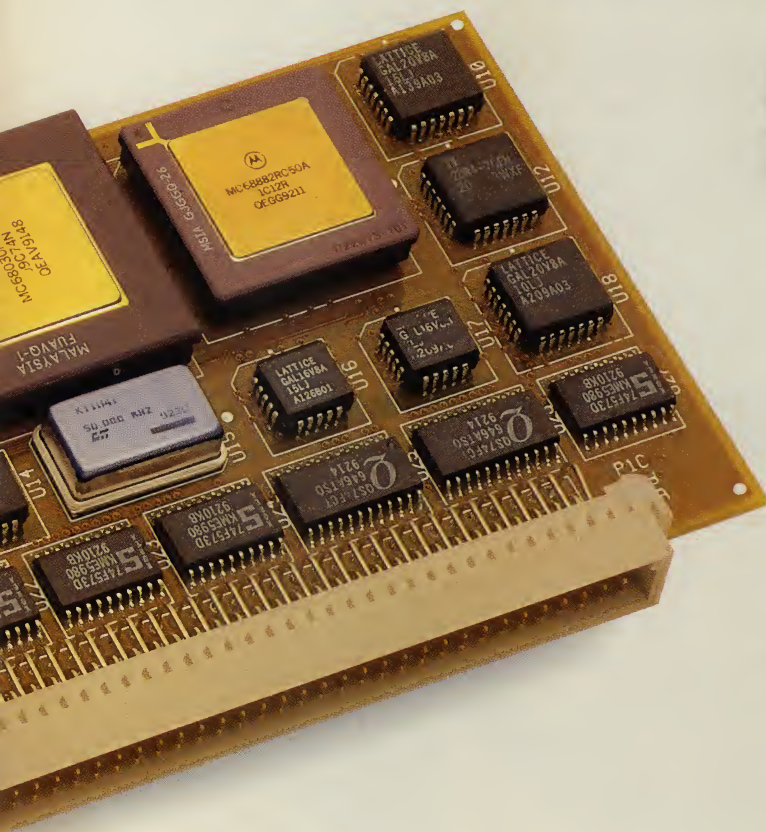
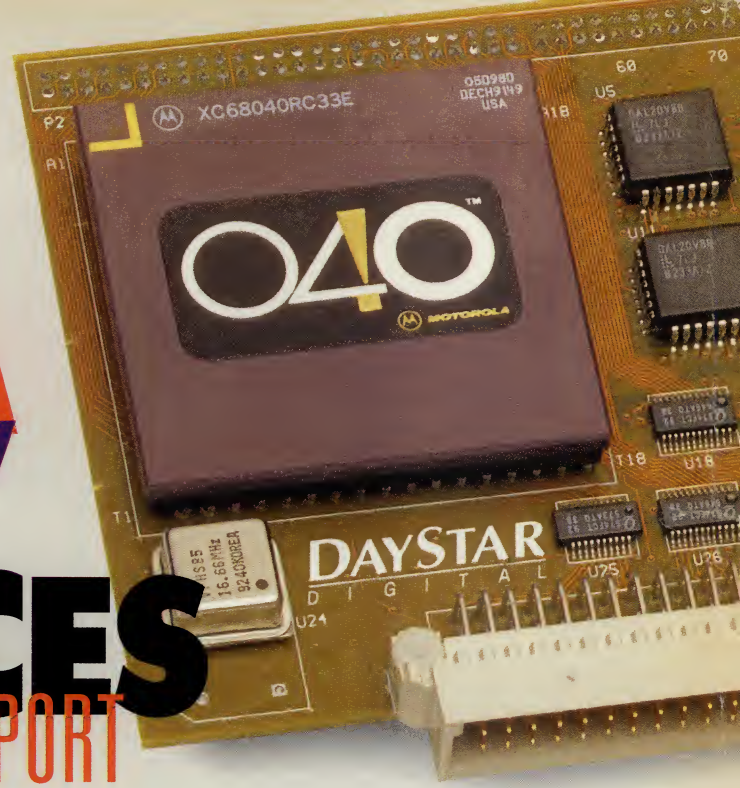
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NuTek close to unveiling first legal Mac compatible

But Apple may force courtroom battle

By Jon Swartz

Cupertino, Calif. — After spending \$10 million over four years to develop what it claims is the first legal Mac-compatible computer, NuTek Computers Inc. is nearly ready to show its wares.

But industry observers said, judging by Apple's past relationships with companies that have attempted to replicate its technology, NuTek may be forced to spend additional millions — on legal fees.

NuTek said it will ship its product, a 33-MHz 68030 logic board and system software, this quarter for about \$1,000 to Apple value-added resellers and dealers, who could then build Mac clones.

The 30-person company already has shipped a limited number of units to European dealers but declined to name them. NuTek, which is financed by Taiwanese venture capitalists, said it has gone to great lengths to reverse-engineer

the Mac and has worked closely with a prominent intellectual-property attorney to ensure it hasn't violated Apple patents and copyrights.

A company spokesman said NuTek relies on Mac-compatible ROM code written from scratch. Mac applications running on NuTek's hardware will be displayed with OSF's (Open Software Foundation's) Motif user interface instead of the Mac interface. NuTek said it has spent the past few months testing software and hardware compatibility on initial systems.

Nevertheless, industry observers said it is almost a certainty that Apple will take legal action as soon as NuTek ships its systems.

"Apple will sue them. No question," said Ronald Laurie, a Menlo Park, Calif.-based copyright attorney.

An Apple spokesman said the company does not think it is possible to produce a clone of the Mac without violating Apple copyrights, and it will "continue to defend aggressively our intellectual property."

But sources said NuTek has a "war chest" of several million dollars and is willing to defend itself in court. □

Apple ergonomic keyboard may hit snag

By Nathalie Welch

San Francisco — Apple officially announced its ergonomic keyboard and mouse at Macworld Expo here last week and immediately ran into flak from an inventor who said he will sue the company over the keyboard.

The Apple Adjustable Keyboard will ship next month for \$219. Also starting next month, the Apple Desktop Bus Mouse II will be bundled with Apple CPUs or sold separately for \$79.

In a radical break from traditional keyboard design, the new Apple keyboard lets users find a more comfortable typing position by adjusting its two sections up to a 30-degree angle.

Tony Hodges, an inventor based in Mountain View, Calif., said he

has a 1986 patent on split-keyboard design and plans to sue Apple, as well as dealers, distributors and purchasers of the new keyboard.

Apple said it developed the keyboard through independent R&D and does not believe it infringes any patents.

The 111-key keyboard has detachable palm rests, slope-adjustable feet, and front-mounted volume and record keys. It comes with a separate extended keypad.

The Apple Desktop Bus Mouse II features a rounded shape with a large button occupying the front part of the device. The tracking ball is located at the front of the device, giving users better cursor control with fewer arm movements. □



The new Apple keyboard can be angled to help typists keep their wrists in a comfortable position. Inventor Tony Hodges says he has a patent on this design and intends to sue Apple.

News

- 4 **Mainstay unveils Phyla, updates MarcoPolo**
New object-oriented database app lets users specify relationships between stored data and build forms.
- 6 **Palomar helps PowerBooks On The Road**
Utility automatically connects to servers and selects printers based on PB network connections.
- 22 **Mail order delivers for IS managers**
Managers find that buying by mail can save them money and a trip to the dealer.



Gateways

- 28 **Banyan ships Vines 5.5, ENS NetWare bundle**
Mac users won't be able to take advantage of new Vines or ENS features until later this year.
- 28 **Windows, DOS, Unix to join Mac DataClub**
Cross-platform connectivity in works for Novell's virtual file-server software.

GA

- 34 **Quark publishes newspaper system**
Database keeps track of articles in workgroups and integrates them with QuarkXPress.
- 34 **Cricket Draw III leaps ahead with new PS tools**
Version 2.0 lets users view bound text on curved paths.

BusinessWatch

- 40 **Macromedia rolls with executive changes**
But pressure to go public remains.
- 40 **ITC to reconsider display tariff**
Federal court says 62.7 percent levy was based on 'misreading' of law.

Opinion

- 46 **Editorial**
Heinen defection a victory for Microsoft.
- 46 **Commentary/Jean-Louis Gassée**
Apple needs to make move to IS dimension.
- 47 **Letters**
The hidden cost of Adobe's free offer.
- 47 **Mac Manager/Don Crabb**
The file sync or sink dilemma.

Special Report

- 49 **Mobile computing**
MacWEEK examines large-scale ARA installations and support of PowerBooks in the field, and reports on Global Village's move to dial-in servers.

Reviews



- 63 **Keeping your files synchronized**
A look at sync software from Inline Design, Xanatech, Leader Technologies, Qdea, Symantec and No Hands.
- 63 **Status quo with STATUS*Mac upgrade**
Users still in control with Version 3.0.
- 70 **PixelCraft hones ColorAccess**
Adjunct to Photoshop uses tried-and-true pre-press techniques for rendering RGB images.
- 71 **Kai's Power Tools boosts Photoshop Filters menu**
Special-effects tools and surface generators bring useful manipulation to image-editing program.

ProductWatch



- 75 **Tips for first-time file-server buyers**
Finding the right CPU for specific needs.
- 80 **MacInTouch/Ric Ford**
Finder has trouble telling time.
- 80 **Ask David Ramsey**
A piece of his mind about PowerPC.

Mac the Knife

- 134 **System Software Forum Update 2**
The AppleScript, AOCe, QuickDraw GX skinny.
- 83 **Ad Showcase**
- 85 **Mail Order**
- 114 **Classified**
- 130 **Careers**
- 132 **Advertiser Index**
- 133 **Product Index**

Connections to debut at NetWorld

Apple Internet Router will support AURP

By April Streeter

San Francisco — Macintosh network managers who brave the Boston chill for this week's NetWorld 93 should find enough Mac-related product fodder to make the trek worthwhile.

Apple, although forgoing a booth, is set to introduce the Apple Internet Router, a renamed and improved successor to its AppleTalk Internet Router 2.0. The new incarnation of Apple's software router, to be delivered this quarter, will have AppleTalk Update-based

Routing Protocol and an SNMP (Simple Network Management Protocol) agent. Two extensions also to be unveiled, the X.25 Wide Area Extension and the IP Wide Area Extension, will work with the Internet Router to allow AppleTalk networks to communicate over X.25 or Internet Protocol links.

Banyan Systems Inc. will make a double splash at the show by shipping Version 5.5 of the Vines operating system and a bundle of Vines network services for Novell Inc.'s NetWare (see story, Page 28).

NetWorld won't be the venue for Novell's long-awaited announcement of its next operating system release, NetWare 4.0, however, and after this year Novell

will no longer sponsor NetWorld shows.

For the hardware-happy, Cayman Systems Inc. will take the wraps off GatorBox EX, a two-port \$3,495 Ethernet-to-Ethernet router for the Macintosh market. At the larger end of the router scale, Andrew Corp. will show the \$12,400 Path-Wise/6500, a backbone router with support for as many as 28 ports. It is expected to ship at the end of this month.

From among the grab bag of new software products, Powercore Inc. of Manteno, Ill., will introduce a Mac client for its time-management software, Network Scheduler 3. Expected in April for about \$50 per user, the client allows Mac users in a heterogeneous network to share scheduling information with their DOS and Windows counterparts via an AppleShare, AFP (AppleTalk Filing Protocol)-compatible or Novell NetWare server.

CE Software Inc. will show a Mac client for Novell's Message Handling Service transport mechanism. Due in the second quarter, it will have an interface similar to that of QuickMail and will sell for about the same price per node (QuickMail is \$649 for a 10-pack). DOS and Windows versions of the client reportedly are also in the works. □



A Macintosh client for Powercore's Network Scheduler 3 lets users schedule meetings and share calendar information with their DOS and Windows colleagues.

GCC ships tab-size printer, betters wide bubblejet

By Matthew Rothenberg

San Francisco — GCC Technologies Inc. last week extended its output horizons with a new tabloid-size, true 600-dpi laser printer as well as enhancements to its wide-format bubblejet model.

► **SelectPress 600.** The company unveiled the \$4,499 SelectPress 600 at Macworld Expo here. The new laser printer, due later this month, can output full-bleed 11-by-17-inch pages. The SelectPress 600 prints 8 letter-size or 4 tabloid-size pages per minute.

It will ship with PhoenixPage PostScript Level 2 emulation from Phoenix Technologies Ltd. of Cambridge, Mass., and 39 Type 1 fonts, as well as a PCL 5 interpreter, and it switches automatically among emulations. The printer comes with simultaneously active LocalTalk, RS-232 serial and Centronics parallel ports; an Ethernet interface is \$399.

The SelectPress 600 is based on a Toshiba TN-7270 engine and includes a 25-MHz AMD 29030 RISC chip with 8 Mbytes of RAM, which can be expanded to 40 Mbytes. It also comes with a 40-

Mbyte internal hard disk and a 250-sheet paper tray. A 250-sheet paper-tray assembly that fits under the printer and a 150-sheet multipurpose feeder are \$499 and \$299, respectively.

► **WideWriter 360 enhancements.** GCC also announced several new hardware and software features available to users of its \$1,699 WideWriter 360 bubblejet printer, which outputs 360-dpi images to pages measuring up to 17 by 22 inches.

The company unveiled a C-size sheet feeder that accommodates 100 pages and will be available by April as a \$499 option. Software enhancements include a gray-scale printing feature for color files, more-accurate vertical scaling of images, and the ability to print to translucent media that may not be detected by the printer's optical paper sensor. Software upgrades are free.

GCC is offering a \$100 rebate on the WideWriter 360 through March 31.

► **ColorSync profiles.** GCC announced device profiles that

make its ColorFast film recorder and ColorTone dye-sublimation printer compatible with ColorSync, Apple's device-independent color technology (see story, Page 1).

GCC Technologies Inc. is at 209 Burlington Road, Bedford, Mass. 01730-9143. Phone (617) 275-5800; fax (617) 275-1115. □

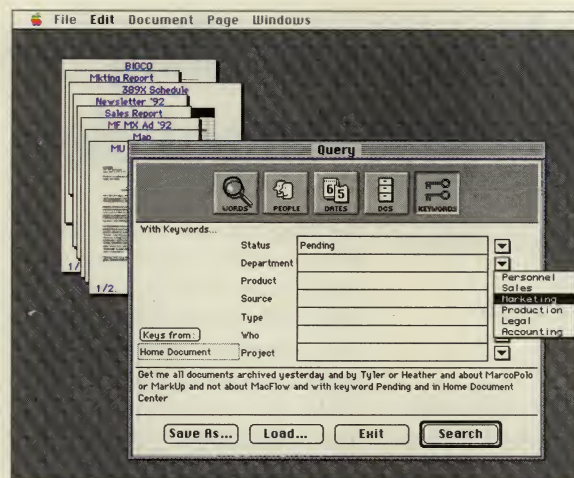
IBM keeps slim lead over Apple in PC market

By Kathy White

San Jose, Calif. — It came down to the wire, but a solid performance by IBM Corp. in the last quarter of 1992 left it atop the worldwide personal computer market again, just edging out Apple, according to two market research companies.

Boosted by solid sales in Europe of its ValuePoint PCs, IBM garnered 12.4 percent of worldwide unit sales last year, compared with Apple's 11.9 percent, according to a survey by Dataquest Inc., based here.

A separate survey by International Data Corp. of Framingham, Mass., gave IBM a slightly larger



MarcoPolo 2.0, which can act as a low-cost document-imaging system, has expanded search options. Search results are shown in list view (active window). Documents from the list can be opened as Mini-Pages for visual recognition.

Mainstay upgrades MarcoPolo, readies object-oriented database

By Mitch Ratcliffe and Carolyn Said

San Francisco — Mainstay last week introduced an object-oriented database application called Phyla and said it will ship an upgrade to its MarcoPolo document-management program later this month.

► **Phyla**, due in midyear, will let users specify relationships between attributes of stored data and build forms and queries in a drag-and-drop interface, Mainstay said.

"This is not a programming environment, it's an end-user application," said Tom Nalevanko, the company's president. He said Phyla will offer all the data integrity features of a high-end relational database.

Phyla users will be able to create records that can be treated as objects, which they can link to other objects or classes of objects simply by dragging. Once these relationships have been defined, users will be able to query and analyze the data.

Phyla users will be able to view the same data in multiple ways. For example, a list of drunken drivers could be viewed by amount of the fines or by arresting officer.

Phyla initially will support only

single-user data access. Users will be able to share data via electronic mail or on floppy disks. The next release, scheduled for late this year, will tap the messaging services of Apple's AOC (Apple Open Collaboration Environment) to deliver distributed database capabilities, which will let users query data residing on multiple Macs.

Pricing has not been determined.

► **MarcoPolo 2.0**, priced at \$395, images documents and then compresses and archives them into databases called document centers.

The upgrade adds support for multiple local or networked document centers, a built-in scanner interface, improved search features, and sound and QuickTime support. Upgrades are \$75; they are free to users who purchased after Oct. 1, 1992.

In other news, Mainstay said it plans to ship Windows flowcharting and scheduling applications, which will offer file compatibility with future releases of the company's MacFlow and MacSchedule, later this quarter.

Mainstay is at 5311-B Derry Ave., Agoura Hills, Calif. 91301. Phone (818) 991-6540; fax (818) 991-4587. □

lead. According to IDC, IBM shipped 12 percent of the personal computers worldwide in 1992, compared with Apple's 10 percent.

Brad Smith, chief PC analyst for Dataquest, said Apple's market share continues to inch up, while the financially troubled IBM continues to lose market share. In 1991 Big Blue had 16.3 percent of the personal computer market worldwide, compared with Apple's 11.2 percent.

Through nine months of 1992, Apple had shipped 2.03 million units, and IBM had shipped 1.85 million, according to IDC estimates (see MacWEEK, Nov. 2, 1992).

"The results swing back and forth depending on where each company is in the life cycle of a product line," said Bruce Stevens, director of PC hardware research for IDC. "IBM was ramping up in the last quarter with ValuePoint PC."

The biggest winner in the 1992 PC rankings was Dell Computer Corp., which jumped from No. 11 to No. 5. The Austin, Texas, company's market share more than doubled, from 1.7 percent to 3.5 percent. Compaq Computer Corp. of Houston and NEC Corp. of Tokyo rounded out the top five, at third and fourth, respectively. □

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On The Road keeps PBs connected

Automates linking to printers, servers

By Raines Cohen

Oceanside, Calif. — Palomar Software Inc. last week shipped On The Road, a PowerBook connectivity and printing automation utility.

The \$99 program provides deferred printing and faxing of documents created when the notebook is not connected to a printer or

phone line. When connections are re-established, the software can automatically mount server volumes, select printers and output waiting documents (see MacWEEK, Nov. 2, 1992).

The program determines whether the user is at home, work or some other location by looking at what network devices are connected whenever users wake up or restart their PowerBooks. It can launch applications preselected by the user when it is at a particular location. It

can, for example, automatically run a groupware program only when the system is at work.

When a user is not connected to any network devices, the utility changes the Print button in print dialogs to Defer and queues up documents for printing later when a printer is connected.

The package consists of a background application and a system extension that adds a small icon to the right-hand corner of the menu bar, just to the left of the help menu.

According to the company, the program is compatible with all PowerBooks and supports a variety of printers and fax modems. It works with LocalTalk, EtherTalk and AppleTalk Remote Access networks.

Palomar Software Inc. is at 2964 Oceanside Blvd., Suite D, Oceanside, Calif. 92054. Phone (619) 721-7000; fax (619) 721-4758. □

Procom fills out storage offerings with PB, CD-ROM drives, SCSI card

By Kirsten L. Parkinson

San Francisco — Procom Technology Inc. last week unveiled a host of new products, including PowerBook hard disks, CD-ROM drives and a new SyQuest drive, at Macworld Expo here.

► **Small drives.** The company, which introduced a 200-Mbyte PowerBook internal drive last November, added three more capacities, plus external versions of the 2.5-inch systems. Prices range from \$795 to \$1,695

(see chart). The MicroMD external models measure 5.5 by 3 by 1.5 inches and weigh 1.5 pounds.

The 80-Mbyte, 120-Mbyte and 160-Mbyte models have average access times of 16 milliseconds and sustained data transfer rates of 2 Mbytes per second, according to the company. The 200-Mbyte drive offers an average access time of 12 milliseconds and a sustained data transfer rate of 3.2 Mbytes per second. The 80-Mbyte and 120-Mbyte drives are available now; the 160-Mbyte models and 200-Mbyte external model will ship later this month.

► **CD-ROM drives.** Procom announced shipment of the macCD/MX, a \$795 CD-ROM player offering multisession Kodak Photo CD support. Based on a dual-speed Toshiba mechanism, the drive offers an average access time of 200 milliseconds and a sustained data transfer rate of 330 Kbytes per second (see MacWEEK, Nov. 16, 1992). It is also available, along with headphones, speakers and seven CD-ROM titles, in a \$995

bundle called macCD Station II.

Procom also unveiled the macCD Player, a \$399 drive based on an NEC mechanism with single-session Photo CD support, an average access time of 650 milliseconds and a sustained transfer rate of 150 Kbytes per second. Due next month, the drive will ship with stereo headphones and a shareware CD-ROM.

► **New SyQuest drive.** Procom's MRD-80C, based on SyQuest Technology Inc.'s new SQ5110C, can read and write both 44- and 88-Mbyte removable cartridges. The new drive lists for \$995.

► **SCSI-2 card.** Procom announced shipment of the Nu32 SCSI Enabler, a \$995 NuBus coprocessor card. Based on the Silicon-Express II from ATTO Technology Inc., the bus-master card supports disk mirroring, data striping and 10-Mbyte-per-second burst transfers when connected to a Fast SCSI drive.

Procom Technology Inc. is at 2181 Dupont Drive, Irvine, Calif. 92715. Phone (714) 852-1000 or (800) 800-8600; fax (714) 852-1221. □

Procom's new PB drives

CAPACITY	MECHANISM	PRICE
ATOM internal drives		
80 Mbytes	Quantum	\$795
120 Mbytes	Quantum	\$995
160 Mbytes	Quantum	\$1,195
200 Mbytes	Toshiba	\$1,495
MicroMD external drives		
80 Mbytes	Quantum	\$995
120 Mbytes	Quantum	\$1,195
160 Mbytes	Quantum	\$1,395
200 Mbytes	Toshiba	\$1,695

Spyglass sharpens up Dicer; adds better data slicing, manipulation

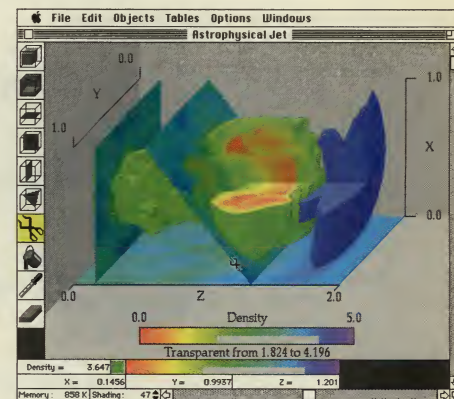
By Raines Cohen

Savoy, Ill. — A new version of the Dicer visualization application due this month from Spyglass Inc. will let users go deeper into 3-D data than before.

Version 2.0 will add oblique slicing, isosurfacing and labeling, as well as improved data manipulation and import routines, to the \$695 scientific application.

Other new features will include:

- **Arbitrary slices.** Users will be able to slice through 3-D data sets at any angle, not just right angles.
- **Isosurfaces.** Data cubes, normally opaque, can be made transparent to render data as isosurfaces.



Dicer 2.0 adds oblique slicing (with interactive rotation of slices), isosurfacing and labeling of 3-D data.

- **Data manipulation.** Users will be able to scale, annotate and label data for display or publishing.
- **Enhanced importing.** A new utility in the package will let users create volumetric data sets from text files with columns and matrices, as well as generic byte, PICT, PICS, TIFF, GIF (Graphic Interchange Format), MatLab, X Window and other file formats. Previous versions supported only Hierarchical Data Format (HDF) files.

"It's really hard to get a handle on atmospheric data if you're looking at it as a whole bunch of numbers," said Kurt Christensen, chief technical officer of Apeiron, a Dallas developer of custom applications. "Most graphics applications can't read HDF files, so I process the data with Dicer for import into other programs."

Current Dicer users can upgrade for \$149, or for free if they purchased an earlier version after Nov. 1, 1992. Spyglass Inc. is at 1800 Woodfield Drive, Savoy, Ill. 61874. Phone (217) 355-6000; fax (217) 355-8925. □

SuperMac develops Photo CD kit

By Neil McManus

San Francisco — SuperMac Technology wants to offer a one-stop shop for users of the Kodak Photo CD image system.

In March the company will release a kit for Photo CD users that will include an accelerated 24-bit graphics card, a CD-ROM drive and bundled graphics applications.

The new SuperMac package, introduced at Macworld Expo here last week, will come in two versions:

- **PhotoSpeed**, priced at \$3,999, will include a NuBus graphics card with 450 percent QuickDraw acceleration at resolutions up to 1,024 by 768 pixels.
- **PhotoSpeed Pro**, at \$4,999, will come with a card that provides 1,700 percent acceleration at resolutions up to 1,152 by 870 pixels.

The graphics cards use SuperMac's Thunder technology, which accelerates QuickDraw commands through a proprietary application-specific integrated circuit, and a daughter-card, developed by Storm Technology Inc., with two programmable AT&T 16-bit digital signal processors (DSPs) to speed up graphics applications by up to 2,300 percent.

Both PhotoSpeed kits will come bundled with a Toshiba TXN-3401E multisession CD-ROM drive, which retails for \$895 from Toshiba America Information Systems Inc.

The kits also will come with more than \$2,500 worth of image access, manipulation and retrieval software (see chart). Applications that tap the DSP to speed operations include Storm Technology's PicturePress and Adobe Photoshop 2.5.

SuperMac Technology is at 485 Potrero Ave., Sunnyvale, Calif. 94086. Phone (408) 245-2202; fax (408) 735-7250. □

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Software bundled with PhotoSpeed

IMAGE ACCESS

- Kodak Photo CD Access
- Storm PicturePress
- QuickTime 1.5
- Photo CD Photoshop plug-in (with Pro version)
- Photo CD QuarkXPress XTension

CONTENT

- Form and Function's Wraptures, Vol. 1
- PhotoDisc's Multimedia Sampler
- Color Byte's Stock Photos
- Adobe Type-on-Call

IMAGE PROCESSING

- Adobe Photoshop 2.5 (with Pro version)
- Kodak PhotoEdge (with standard version)
- HSC Software's Kai's Power Tools
- EFI Cachet Starter Kit

IMAGE RETRIEVAL

- Kodak Shoebox Image Manager
- Aldus Fetch

For the record

Several facts were incorrect in last week's story on Component Software Industries Corp.'s FileFlex database.

FileFlex can build and create its own files, not just read files created in other databases. The Windows and Mac versions use the same industry-standard xBase format.

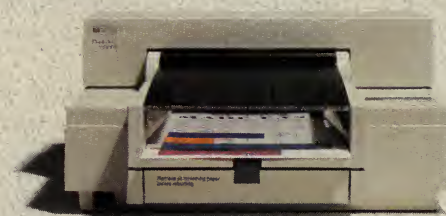
The runtime quantity prices listed in the story are for developers and educational institutions. Runtime licenses can be split across platforms and still receive quantity discounts.

In addition, the Dec. 7 issue incorrectly stated that U.S. Robotics Inc. was offering a free Courier modem upgrade to 28.8 Kbps. The upgrade is \$299.

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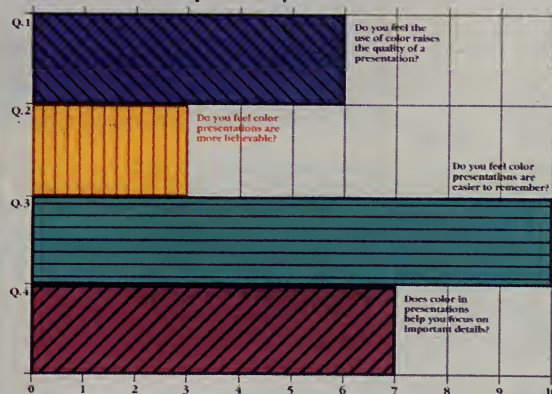
Effective marketing has one very simple objective: To focus positive attention on your product or service. One of the more popular ways to accomplish this is through presentations. Many people have found that the use of color in presentations is an excellent way to maximize their impact.

Printed below are the results of an informal survey to determine the effectiveness of color in marketing presentations.

They are intended only to provide examples of kinds of color output that can be generated. And to offer inspiration for those looking to add strength to their marketing efforts.

Participants were asked to respond to the questions on a scale of one through ten, with one representing "no, strongly disagree" and ten representing "yes, strongly agree". The results were then tabulated and an average was generated, represented in the horizontal graph columns below.

Results of color impact survey:



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**HEWLETT
PACKARD**

Tactics maps update for GIS system

By Raines Cohen

Andover, Mass. — Tactics International Ltd. last month announced a major upgrade to its Tactician Geographic Information System, a new three-tiered pricing structure, and a new tool that will help users create large, rapidly searchable databases on CD-ROM.

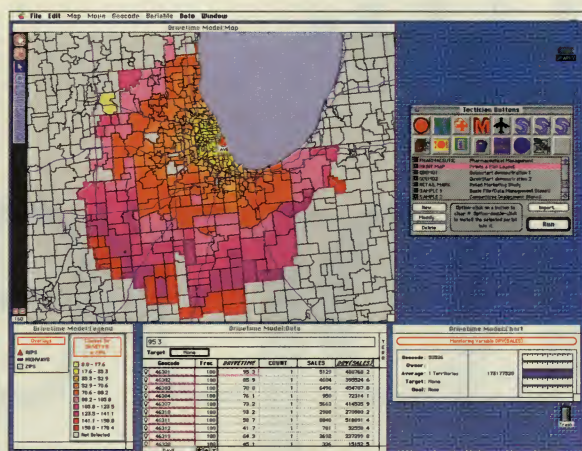
Tactician, aimed at corporate planning departments, can perform SQL queries on host databases, map data and analyze the data geographically.

Tactician was formerly priced at \$2,495, with cartographic data sold separately. Version 3.0, due in March, will come in three forms:

► **Tactician 3.0**, priced at \$995, will include desktop mapping, decision support system and executive information system functions with applications for territory balancing and retail analysis. The basic product includes state, highway and city map information.

► **Tactician with Buttons**, priced at \$2,495, will add a development environment and scripting system, as well as county boundaries. Tactician can run scripts created by Tactician with Buttons.

► **Heavy Duty Tactician**, priced at \$9,995, will include Selling Machine and Micro-Marketing Machine, models that automate analysis and decision support. The



Heavy Duty Tactician includes a drive-time model that can be used to define efficient sales or delivery territories.

high-end product also will offer ZIP-code map data and a choice of more-detailed marketing data.

The Heavy Duty version also will include Tactician Data Warehouse, a utility that can index and compress Tactician data for publishing on CD-ROM. Any version of Tactician can access the data via a SQL query.

"We have a lot of data that people need to access, but people may not know in advance what they need," said Tom Swiontek, planning manager for Sears Roebuck & Co. of Chicago. "Rather than have the data on-line, we can put it on a CD-ROM [with Data Warehouse], and it loads it in a very efficient manner."

Users can upgrade between ver-

sions for the difference in prices. Current users covered by a maintenance contract will receive Tactician with Buttons free.

File-compatible versions of Tactician for Windows, DOS and OS/2 also are available.

Tactics International Ltd. is at P.O. Box 4016 BV, 16 Haverhill St., Andover, Mass. 01810. Phone (508) 475-4475 or (800) 927-7666; fax (508) 475-2136. □

Brainstorm Accelerator lets SE break Mac II performance levels

User-installable card doubles CPU speed

By Carolyn Said

San Francisco — Brainstorm Products last week showed a \$289 accelerator that it said will double speed for both CPU and I/O on the Macintosh SE, boosting performance above Mac II levels.

The user-installable Brainstorm Accelerator for the SE, due in March, will have two components. A card for the SE's expansion slot will have a 68000 processor clocked at 16 MHz, twice the SE's built-in 8-MHz 68000. A proprietary application-specific integrated circuit, which replaces a clip on the SE logic board, doubles the timing of other system functions.

Brainstorm said other SE accelerators increase only the processor speed, leaving memory and I/O functions at the original slower rate.

According to the company, the Brainstorm Accelerator lets an SE run 28 percent faster than a Mac II. It triples the speed of graphics operations; increases SCSI hard drive transfer rates up to fivefold; and accelerates computation-intensive tasks, such as spreadsheet recalculations, by 250 percent, Brainstorm said.

The accelerator's firmware is stored in erasable memory, allowing user updates of the board with new Brainstorm software.

Brainstorm said it will offer plug-in options to upgrade the card to a 68030 CPU and to add a 68882 math coprocessor.

The company also plans a version for the Mac Classic. Brainstorm already offers a similar accelerator for the Mac Plus (see MacWEEK, Feb. 5, 1991).

Brainstorm Products is at 1145 Terra Bella Ave., Mountain View, Calif. 94043. Phone (415) 964-2131; fax (415) 964-2135. □

Iomega ships Bernoulli, floptical drives

By Kirsten L. Parkinson

Roy, Utah — Iomega Corp. last week shipped two 150-Mbyte Bernoulli drives and its first floptical drive for the Mac.

► **High-capacity Bernoullis.** The new MultiDisk 150 line lets users store data on removable cartridges with capacities of 150, 105, 88, 65 and 35 Mbytes; it also reads but does not write older 44-Mbyte cartridges (see MacWEEK, Nov. 16, 1992). The drives offer an "effective access time" of 18 milliseconds, according to the company.

Two models are now available: The external Bernoulli MultiDisk 150 MacTransportable is expected to carry a street price of about \$800. The MacInsider, an internal version for the Quadra 900 and 950 will sell for about \$770. The company did not release suggested retail prices.

The drives come with a 150-Mbyte cartridge of shareware programs.

► **The Bernoulli Mac Floptical** stores up to 21 Mbytes of data on special floppy disks. The drive, which Iomega developed on the basis of technology originally invented by Insite Peripherals Inc., uses a proprietary holographic opti-

cal tracking technology to improve performance and reliability over first-generation floptical systems from other vendors, Iomega said. It offers an average seek time of 65 milliseconds, the company said.

The company estimates a street price for the Bernoulli Mac Floptical of about \$400, which includes one floptical disk with System 7.0 and shareware. Additional disks range from \$20 to \$22 each.

Iomega Corp. is at 1821 West 4000 South, Roy, Utah 84067. Phone (801) 778-3000 or (800) 777-6179; fax (801) 778-3450. □

Field Assistant will link, track contacts

By Kirsten L. Parkinson

San Jose, Calif. — Field Integration Technology Inc. last week announced Field Assistant, its first product in a forthcoming line of three contact-management and sales-automation applications.

Based on a proprietary relational database, the \$249 Field Assistant lets users link and track contacts, companies and activities, then view them in either list or detailed form.

Features of Field Assistant, due to ship in March, include:

► **Contact management.** Users can store unlimited addresses, phone numbers, activities and notes for a particular company or contact. Ten user-definable fields also are available for assigning sort categories to entries.

► **Scheduling.** Field Assistant includes daily, weekly and monthly views of users' schedules, as well



Field Assistant is a relational database that lets users track and link contacts, companies and activities.

as an integrated to-do list.

Users can choose to view all activities or only certain types of activities, such as meetings or phone calls, on their calendars.

► **Word processing.** A built-in word processor includes basic for-

matting features, such as font, style and margins, to let users print mail-merged letters and envelopes.

► **Communications.** Field Assistant offers basic telecommunications, allowing users to access on-line services and bulletin board systems from within the program.

The company's two other products, Field Professional and Field Executive, due later this year, will add features to Field Assistant, it said. Field Integration will offer an upgrade path at a price not yet set.

Field Professional will offer project-management, expense-tracking and sales-forecasting features. Field Executive will let users share information remotely or on a network.

Field Integration Technology Inc. is at 4960 Almaden Expressway, Suite 327, San Jose, Calif. 95118. Phone (408) 927-6404; fax (408) 927-6312. □

Dayna fuses DOS Mounter, NetMounter into 1 extension

By Robert Hess

San Francisco — Dayna Communications Inc. plans to combine its DOS Mounter and NetMounter utilities into a single system extension.

DOS Mounter Plus, due next month for \$99.95, will let Mac users mount and format DOS disks on their Mac. With the control panel, NetWare servers can be mounted as easily as AppleShare

servers without users having to install Novell's NetWare client.

The Plus version also will provide a new interface and easier installation. The new package, like Insignia Solutions Inc.'s rival AccessPC utility, also will include software from MacPeak Research that lets users mount and format DOS removable media, such as magneto-optical cartridges.

DOS Mounter will remain avail-

able at \$89.95. Owners of any DOS disk-mounting utility can purchase DOS Mounter Plus for \$24.95. Users who purchased DOS Mounter 3.x after Jan. 1 can upgrade free. NetMounter will continue to sell for \$99.95.

Dayna Communications Inc. is at 50 S. Main St., Fifth Floor, Salt Lake City, Utah 84144-0402. Phone (801) 535-4273; fax (801) 535-4207. □



Shop the Ethernet supermarket.


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		Thin	\$249
StarController EN		Thin+FPU	\$399
intelligent hub	\$1595	10T	\$249
Ether10-T Starlet		10T+FPU	\$399
9-port mini-hub	\$399	Thin+10T	\$329
		Thin+10T+FPU	\$479
Transceivers		<i>SE/30 & IIsi</i>	
Ether10-T AUI	\$149	Thick+Thin	\$299
Ether10-T AAUI	\$149	Thick+Thin+FPU	\$449
		Thick+10T	\$299
EtherMac Cards		Thick+10T+FPU	\$449
<i>Mac SE</i>		3-way	\$379
3-way	\$329	3-way+FPU	\$529

Prices are suggested retail. 64K cards available.

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Reporter's Notebook

Enthusiasm, water level rise as crowds flood expo

By MacWEEK Staff

San Francisco — Macworld Expo

attendees sailed into Baghdad-by-the-Bay last week and were later carried out on the rising tides of the city's flooded sewers as nature reminded Northern California of what winter is really like.

But adverse weather did little to dampen the enthusiasm of the Macintosh faithful. Even if the longest lines were at the coat-check stations, and there was a noticeable drought of knock-out new products, the economy was definitely raining pennies from heaven.

The aisles were packed with users who, although they were literally wet behind the ears, were ready to buy the products they'd moved down on the shopping list during the past couple of years. Hundreds of PowerBooks, utilities and accessories rolled out the door with happy new owners.

For the first time, the buses to Brooks Hall didn't run, as the show moved its second leg into the huge new pavilion added this year to the Moscone Center. The convenience and extra space — the new north hall wasn't even full — were welcome, at least to those who didn't mind the aroma of freshly installed carpeting.

However, show goers didn't have to forgo the traditional pleasure of long shuttle bus rides: The expo's official parking lot was at the Cow Palace, seven miles from Moscone, and quite a trek through traffic-clogged streets.

This year's emphasis on the consumer market was reflected in the large number of booths selling educational software, games and other products for high-tech kids.

For those less enamored of family values, Macworld featured at least five vendors hawking multimedia pornography; the sight of virtual playmates stripping drew a slew of gawkers.

Meanwhile, Marilyn's melted and Elvises evaporated to the sound of computer-generated music on a huge screen showing off Gryphon Software Corp.'s Morph.

When the flash and pop of color-corrected cameras over Apple's range of imaging announcements died down, the company provided little else in the way of excitement.

In a separate demo room, Apple once again showed its glitzy but still unavailable system extensions: QuickDraw GX; AppleScript; and its messaging system, now officially renamed Apple Open Collaboration Environment (AOCE).

Anxious to learn about the RISCs they'll soon be running, users and developers flocked to both public and private briefings about the PowerPC. Apple's message: "It's gonna be great but don't let that stop you from buying Macs now." □



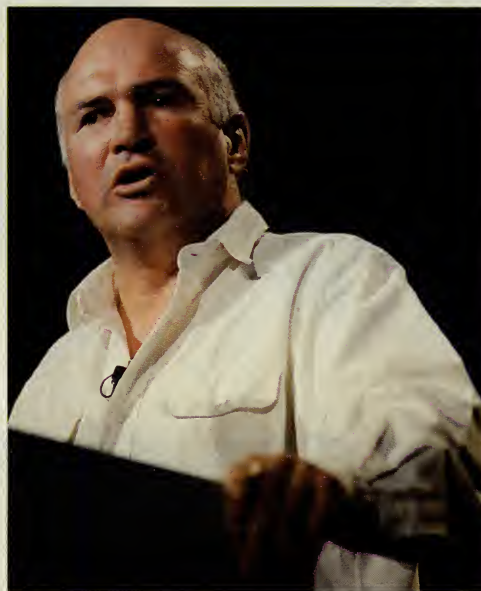
JAMIE TANAKA



Like gag gifts and fire alarms, Apple's Newton personal digital assistant was shielded under glass; nevertheless, it drew hordes of interested onlookers (above). Although Apple and Microsoft are at loggerheads much of the time, on the show floor they were nestled cheek by jowl (left).

JAMIE TANAKA

Ian Diery, executive vice president of worldwide sales and marketing, officially rolled out Apple's narrow spectrum of imaging products at a keynote address (right). Meanwhile, third parties such as Electronics for Imaging (bottom, left) lined up to show how their color products stack up.



ED CALDWELL

To the delight of cabdrivers and dry cleaners, San Francisco was flooded with more than 50,000 expo goers and a series of the biggest downpours in years. There was also a flood of low-cost education and entertainment products. Many resellers on the show floor seemed to be doing brisk business in products priced at less than \$50.



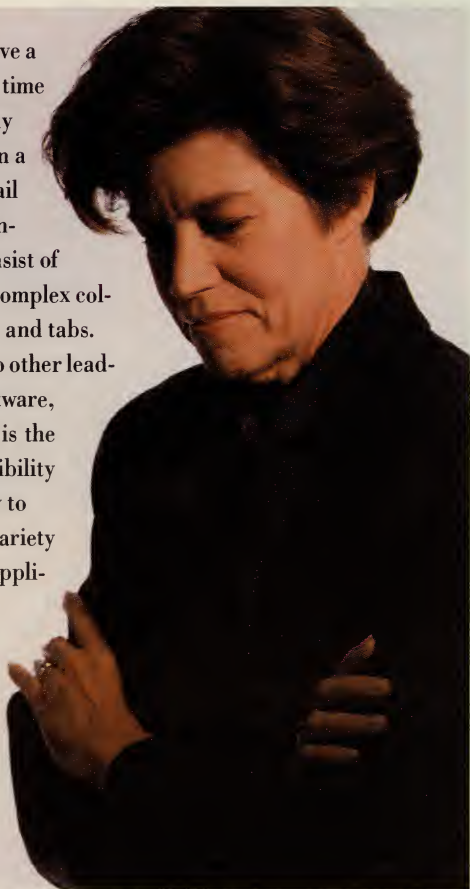
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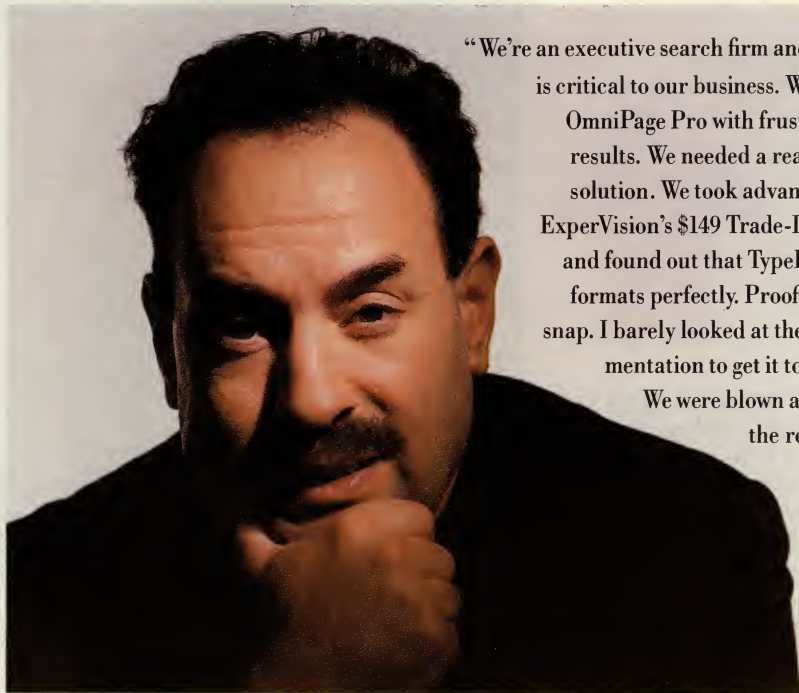
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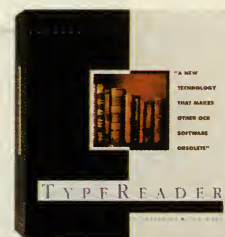
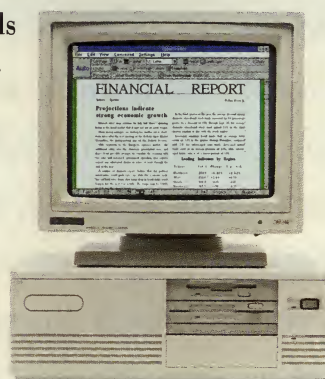
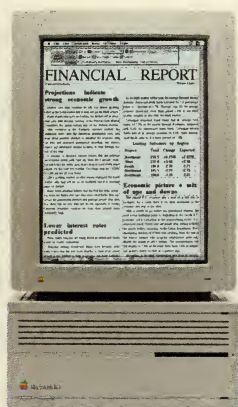
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Call today at **1-800-562-8882** and become one of the growing number of zealous TypeReader users. For technical information and the name of your nearest reseller, call 1-800-732-3897.

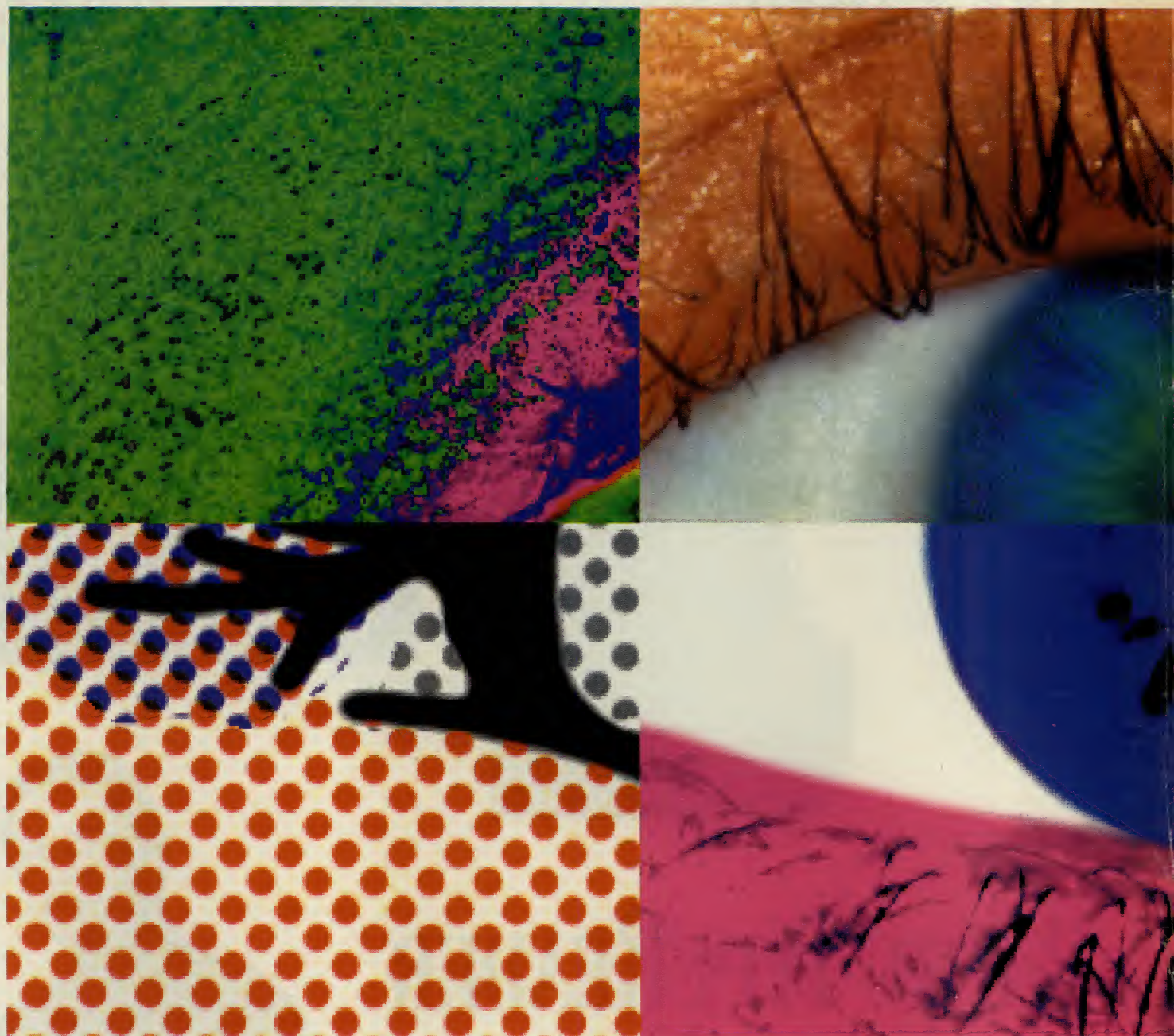


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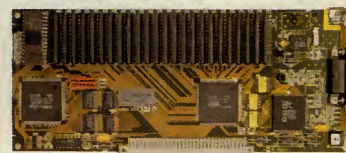
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Presenting NEC's 15", 17" and 21" MultiSync® FG™ display systems*—a colorful combination of our award-winning monitor technology and a display interface card designed specially for NEC FG monitors by Radius™.



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MacUser Aug 1992
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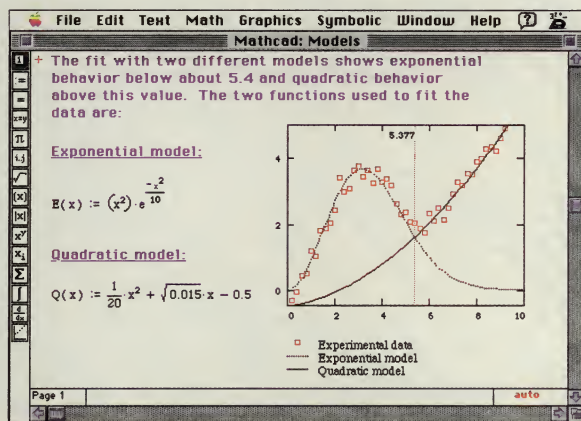
Mathcad 3.1 adds up new features

Supports System 7, reference handbooks

By Raines Cohen

San Francisco — MathSoft Inc. released a major upgrade to its numeric and symbolic calculation application last week at Macworld Expo here. The \$495 program now supports Electronic Handbooks and includes several interface enhancements.

Mathcad 3.1 is based on the Maple V engine from Waterloo Maple Software and the University of Waterloo in Waterloo, Ontario. It can handle complex symbolic problems, fast Fourier transforms, factoring of polynomials, Bessel functions, matrices, and simultaneous linear and nonlinear equations.



New features include:

► **Electronic Handbooks.** Mathcad 3.1 can read MathSoft's \$99 documents containing technical information, formulas, graphs, equations and reference values. Current titles include chemical, physics and

electrical engineering references.

► **Interface improvements.** The program's equation editor has been improved. Users now can open as many as nine documents at one time. The new version supports axis labels, tick marks, user-defined grid lines and legends in charts.

► **System 7 compatibility.** Mathcad 3.1 includes balloon help and now works with virtual memory and TrueType fonts.

Macintosh Mathcad 3.1 completes the company's range of platform offerings; MathSoft last year released Version 3.1 for Windows, MS-DOS, Unix Open Look and Motif platforms. Mathcad files are compatible across platforms.

Upgrades are \$49.95.

MathSoft Inc. is at 201 Broadway, Cambridge, Mass. 02139-1901. Phone (617) 577-1017 or (800) 628-4223; fax (617) 577-8829. □

Spreadware app does forecasting

Palm Desert, Calif. — Spreadware is now shipping pro forma, an application that simplifies the task of creating, manipulating and analyzing financial forecasts.

With pro forma, which requires Microsoft Excel 4.0, users can quickly forecast financial conditions by automatically building new spreadsheet models based on user-defined parameters.

Data can be entered manually or imported from spreadsheet, database and accounting programs.

Users also can automatically perform "what-if" analyses, and pro forma lets users change all the elements of their spreadsheet model to generate multiple "what-if" scenarios.

Spreadware's pro forma is available at an introductory price of \$189 through Jan. 31, after which it will sell for \$389.

Spreadware is at P.O. Box 4552, Palm Desert, Calif. 92261. Phone (619) 347-2365; fax (619) 347-6045. □

MathSoft's Mathcad 3.1 supports interactive Electronic Handbooks with formulas and reference material for users to copy into their worksheets.

Chinon spins out magneto-optical, Photo CD-compatible CD drive

By Kirsten L. Parkinson

San Francisco — Chinon America Inc.'s Information Equipment Division last week showed off two new magneto-optical drives and a new Kodak Photo CD-compatible CD-ROM drive at the Macworld Expo here.

The company announced:

► **Series 300,** a 128-Mbyte magneto-optical drive due by the end of the first quarter, is based on a 3.5-inch Chinon mechanism.

The \$1,695 drive will offer an average seek time of 45 milliseconds and a sustained data transfer rate of 625 Kbytes per second.

► **Series 100,** also due by the end of March, will have a 60-millisecond average seek time and a sustained data transfer rate of 384 Kbytes per second.

The \$1,495 drive is also based on a 3.5-inch Chinon mechanism.

The prices of the drives do not include any 128-Mbyte cartridges.

► **CDA-535,** a multisession Kodak Photo CD-compatible CD-ROM drive, is due later this quarter for \$795.

Using the company's own mechanism, the CDA-535 drive will have an average access time of 280 milliseconds. It will offer transfer rates of 150 Kbytes per second for audio data and 300 Kbytes per second for nonaudio data.

Chinon America Inc.'s Information Equipment Division is at 615 Hawaii Ave., Torrance, Calif. 90503-9747. Phone (310) 533-0274 or (800) 441-0222; fax (310) 533-1727. □

Microsoft builds Excel-based EIS Pak

By Lisa Picarille

San Francisco — Microsoft Corp. last week demonstrated The Microsoft Open EIS Pak for the Macintosh, a set of Excel-based development tools. The Open EIS Pak aims to help users create corporate information systems based on the popular spreadsheet, without writing code.

The \$99 package will include a variety of tools for creating custom menus, user-prompt dialogs, navigation controls and links to other applications. A videotape and sample applications will be included.

Unveiled at Macworld Expo here, The Open EIS Pak will go into beta testing this month and is slated to ship later this quarter. It will be nearly identical to a Windows-based version that Microsoft released in November, according to the company.

An international version of the product that will let users develop custom applications in non-English languages also is due this quarter.

Any application created using either platform's version of Open EIS Pak will be able to run on the other platform, as long as the end user has Excel 4.0 or higher. Users will be able to freely distribute applications developed with the system.

Because applications built with EIS Pak require Excel, they will be able to support all Excel functions, including charting and graphing, as well as System 7 features such as publish and subscribe, Apple events, and the Data Access Manager.

Microsoft Corp. is at 1 Microsoft Way, Redmond, Wash. 98052-6399. Phone (206) 882-8080 or (800) 227-4679; fax (206) 936-7329. □

xREF uncovers enhanced 4D debugging

By Robert Hess

New York — 4th Dimension database developers dissatisfied with ACI US Inc.'s debugging tool, 4D xREF, will be able to turn to a third-party alternative.

adInfinium Development last month announced objX, which will use 4D xREF text files to give programmers increased control over their code. The application, due later this month, will let users view all objects in a database and explore their relationships to other database objects.

In the \$395 application, an outline view will graphically display the hierarchy of procedures and variables called by objects the user

selects. Objects will appear in the outline wherever they are used so programmers can more easily move the necessary objects when creating a new application that is a subset of the original database.

objX users will be able to attach comments to all objects. The program will export outlines in RTF files, for import into a word processor when creating documentation, as well as in a format compatible with Kaetron Software's TopDown flowchart-creation application.

adInfinium Development is at 412 Seventh Ave., Suite 1R, New York, N.Y. 11215. Phone (718) 788-7092; fax (718) 788-8438. □

ACI shows developers new 4D tools

By Robert Hess

San Francisco — As an encore to its recent delivery of 4th Dimension 3.0 and 4D Server, ACI showed off new tools and discussed product directions at its Sixth Annual Developers Convention here last week.

Marylène Delbourg-Delphis, president of Paris-based ACI, said the company is "seriously progressing toward cross-platform functionality at year's end," moving the Mac relational database to Windows and RISC platforms.

ACI said it is already enhancing the communications support in 4D, adding TCP/IP and a proprietary serial communications method so 4D Server clients eventually may run on MS-DOS and Windows platforms.

Dominique Hermsdorff, ACI vice president of engineering, explained the 4D application programming interface that will allow programmers on any platform to access 4D Servers.

To demonstrate how easily developers can access 4D Server

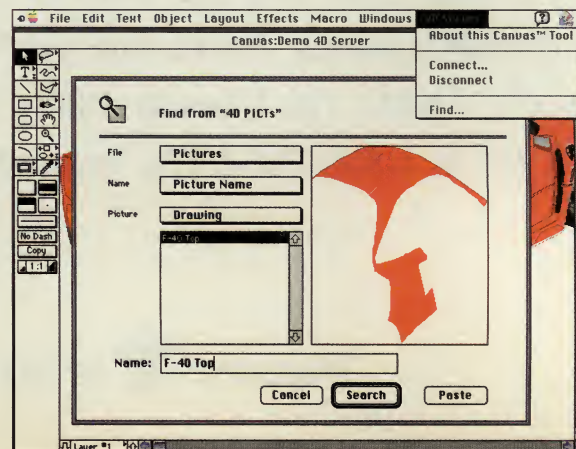
data, Hermsdorff showed Deneba Software's Canvas drawing application accessing a 4D Server through a Canvas plug-in module developed by ACI.

ACI also unveiled a new product, 4D Insider. Intended to replace its 4D xREF, Insider will include a new interface that aims to make it easier for users to inspect 4D databases. Users will be able to view the content of all objects in the database, along with the objects they call and those that call them. Insider is due next month at an undetermined price.

ACI said it soon will introduce 4D Backup, a module allowing 4D Server users to perform customized backups of databases based on the transaction logs 4D Server creates.

The company also said it shipped 4D Compiler 2.0 and soon will update its 4D Calc, Write, Draw and Graph modules, and add a Chart module.

ACI US Inc., the company's U.S. division, is at 10351 Bubb Road, Cupertino, Calif. 95014. Phone (408) 252-4444; fax (408) 252-0831. □



This Canvas plug-in module developed by ACI lets Canvas users query 4D Servers and retrieve images from databases.

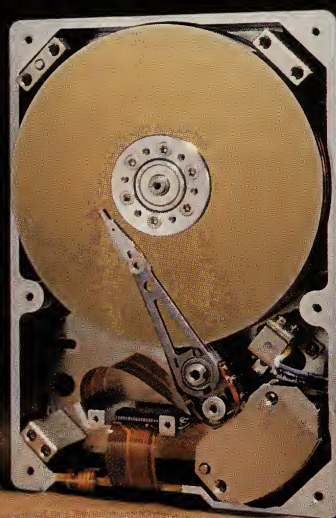
When a company reaches maturity, it tends to fill out a bit.



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SoftPC series opens to Windows

Insignia cuts prices, updates products

By Henry Norr

San Francisco — Insignia Solutions Inc. this week will reduce prices on its family of PC-emulation products as it introduces a Windows version at the high end and reorganizes the rest of the line.

The SoftPC 3.0 series, slated to ship this month, will include:

► **SoftPC with Windows.** A new \$499 version, for which a 68040-based Mac is recommended, will come with MS-DOS 5.0 and Windows 3.1 preinstalled.

The program adds support for VGA graphics, along with EGA and CGA, and it is the first in the Insignia line to emulate the 80286 processor's protected mode and extended memory, a feature required for use of Windows 3.1 and many recent MS-DOS applications.

The new version also uses the Mac Clipboard as the Windows Clipboard, enabling users to copy and paste all kinds of data between the two platforms. To improve performance, the software includes new display and mouse drivers that look to Windows applications like the drivers that come with Windows 3.1 but map the Windows calls to QuickDraw and the Mac mouse.

Still, even when running on a 33-MHz '040, the software offers only about the performance of a 20-MHz 386SX, and some less-

common functions, such as installing and opening applications, are considerably slower, an Insignia spokesman said.

The software is designed not for high-end Windows users or those who run the Microsoft operating system eight hours a day, he said, but for those who need occasional access to custom applications or corporate data that are not available on the Mac.

The software requires 6 Mbytes of Mac RAM to get 640 Kbytes of DOS memory. Insignia recommends using 16 Mbytes of Mac RAM, which provides 8 Mbytes of extended memory for Windows.

► **SoftPC Professional 3.0.** The new Professional version replaces the former SoftAT 2.5. New features include a lower price — \$325 compared with \$499 — plus support for VGA graphics and '286 protected mode and extended memory. A 68020 or better is required.

► **Universal SoftPC 3.0.** Priced

at \$165, compared with \$325 for Version 2.5, the new Universal release runs on any Mac. New features include support for EGA graphics and emulation of the 80287 math coprocessor. It can deliver 640 Kbytes of DOS memory and EGA graphics in only 1.4 Mbytes of Mac memory, according to the company.

All members of the SoftPC 3.0 family include extensions that let users run CD-ROMs designed for DOS.

Entry-Level SoftPC, formerly Insignia's low-end emulation product, has been eliminated.

Upgrades from SoftAT 2.5 to the Windows version are \$129, and upgrades to the new Universal version from its predecessor or the Entry-Level version are \$49. Insignia also offers a variety of other upgrade options, depending on versions owned and desired.

Insignia Solutions Inc. is at 526 Clyde Ave., Mountain View, Calif. 94043. Phone (415) 694-7600; fax (415) 964-5434. □

SoftNode 2.0 extends network links

With the introduction of the SoftPC 3.0 line, Insignia Solutions Inc. is upgrading SoftNode, an add-on that lets a Mac running any of the emulators operate as a PC client on Novell NetWare networks.

Version 2.0 of the \$149 module adds direct support for token-ring networking and TCP/IP access to

Unix file servers via Novell Inc.'s LAN Workplace for DOS. The package also includes gateways that let Mac users without their own Ethernet or token-ring card access NetWare servers over LocalTalk.

SoftNode 2.0 requires a version of SoftPC 3.0. A 10-pack is \$1,150. Upgrades are \$29.

THINK Reference tool tuned up for System 7

By Robert Hess

Cupertino, Calif. — Nearly two years after the release of System 7, Symantec Corp. has released a version of its THINK Reference incorporating System 7-related information.

Version 2.0 of the widely used electronic reference tool for programmers includes the contents of all six volumes of Apple's "Inside Macintosh," as well as technical notes, programmers tips and code

examples created by Symantec. Users can cut code examples from the Reference and paste them directly into their projects.

The new version, priced at \$129, can search for information in several ways. Users can jump directly to any page, search the database for particular words as they are typed, and follow links from items to related topics.

Version 2.0 users can choose to selectively install the program, adding only the desired reference material, to save disk space.

Programmers also can save money, according to Symantec, by purchasing the THINK Reference instead of the \$140 "Inside Macintosh" set. THINK Reference 1.0 users can upgrade by paying an \$8 handling fee.

Symantec Corp. is at 10201 Torre Ave., Cupertino, Calif. 95014-2132. Phone (408) 252-3570 or (800) 441-7234; fax (408) 253-3968. □

All of MacTech CD-ROM Volume I-VIII includes Symantec Corp.'s THINK Reference 2.0 (see story above) and ON Technology Inc.'s On Location 2.0 file-searching desk accessory. The disc also includes all the source code and articles that have appeared in MacTech and MacTutor.

Current MacTutor CD-ROM users can upgrade for \$150.

Xplain Corp. is at P.O. Box 250055, Los Angeles, Calif. 90025-9555. Phone (310) 575-4343; fax (310) 575-0925. □

MacTutor gets new name, CD-ROM update

By Raines Cohen

San Francisco — Xplain Corp. last week changed the name of the longtime Mac programming journal, MacTutor, and issued an update to its companion CD-ROM.

► **MacTech.** The company said it renamed the magazine in part because MacTutor didn't sound technical enough. Annual subscriptions remain \$47.

► **CD-ROM.** Xplain released a new version of its \$299 CD-ROM of developer tools and articles last week at Macworld Expo here.

Orange Micro delivers new crop of 386, 486 coprocessor cards

By Henry Norr

Anaheim, Calif. — Orange Micro Inc. this month will deliver a trio of new MS-DOS coprocessor cards for NuBus Macs, featuring on-board VGA controllers and, at the top of the line, a 486 processor.

The new OrangePC cards are derived from the Orange386, the company's previous coprocessor card, but offer up to twice the processing power of the older model, according to Orange Micro. All three new versions are Windows 3.1-capable, all have math coprocessor sockets and all can display VGA graphics either in a resizable window or in full-screen mode on a 13-inch monitor.

The OrangePC series will include:

► **Entry level.** Priced at \$1,099, the base card will have a 16-MHz 386SX processor and four SIMM slots with 1 Mbyte of RAM (expandable to 16 Mbytes), but no ports or card slots.

► **Midrange.** At \$1,499, the second card will have a 25-MHz 386SX; IBM PC-compatible serial and parallel ports; and 2 Mbytes of RAM, expandable to 16 Mbytes. A built-in expansion slot, intended mainly for network adapters, can accept up to three-quarter-length AT cards, depending on the size of the Mac.

► **Top of the line.** The third model, priced at \$1,799, offers all the features of the second but incorporates a 25-MHz 486SLC in place of the 386.

The cards are all considerably more expensive than Insignia Solutions Inc.'s SoftPC software emulators, which now range in price from \$165 to \$495 (see story at left).

But Orange Micro said its products, designed for serious corporate users, offer commensurately better performance and compatibility. All three versions support protected mode and extended memory, which are required for Windows 3.1, and which Insignia supports only in its new version for Quadras.

OrangePC users will be able to copy text between platforms in either direction, but graphics only from the PC to the Mac, according to the company.

The OrangePC cards will come with MS-DOS Version 5.0 but not with Windows. Orange386 owners can upgrade to the 486-based OrangePC for \$1,199.

Orange Micro Inc. is at 1400 N. Lakeview Ave., Anaheim, Calif. 92807. Phone (714) 779-2772; fax (714) 779-9332. □

Pantone matches presentation colors

By Lisa Picarille

San Francisco — While Pantone Inc.'s ColorUP can't stop you from wearing a plaid jacket with polka-dot pants, the new graphics utility can help business users ensure that their presentations are color-coordinated.

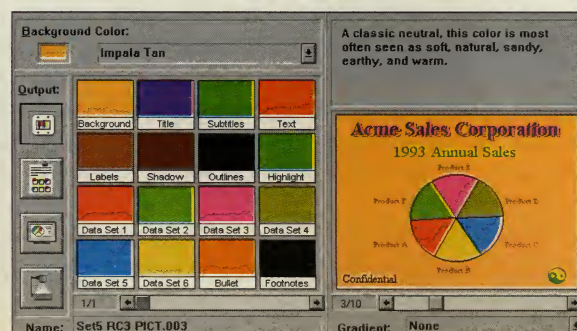
The \$99 tool, which aims to help users manage color in business presentations and reports, was announced at last week's Macworld Expo and is slated to ship in the second quarter.

ColorUP includes a library of more than 200 color palettes created by professional designers. Each palette offers up to 16 colors, which are preassigned to specific presentation elements, such as the title bar,

subheads and bullets. ColorUP palettes can be exported for use in most Mac presentation and graphics packages, including Adobe Illustrator, Aldus FreeHand and Persuasion, DeltaPoint Inc.'s DeltaGraph Professional, and Microsoft PowerPoint. Users can preview palettes before applying them to presentations.

ColorUP also includes an electronic encyclopedia of color terms, tips and information. Called the ColorUP Explorer, the interactive reference material gives visual demonstrations of color concepts such as dithering.

Pantone Inc. is at 55 Knickerbocker Road, Moonachie, N.J. 07074. Phone (201) 935-5500 or (800) 222-1149; fax (201) 896-0242. □



Pantone's ColorUP lets users preview palettes before applying them to presentations. Palettes contain up to 16 colors preassigned to elements.

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The ColorPoint PSX is ideal for network use. This workhorse prints from a full spectrum of computers, including PCs, Macs, and UNIX workstations in any combination on a network.

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Logical Solutions breaks out pattern editor

By Henry Norr

St. Paul, Minn. — Logical Solutions Inc., which developed a desktop-pattern editor as part of its 7th Heaven utilities collection, this month will begin offering the program on a stand-alone basis.

Called Chameleon, the program gives users instant access to up to 256 patterns, which can be as large as 128 by 128 pixels. Users can create new patterns with the program's built-in painting tools or by pasting in PICT images; import and export functions make it possible to share patterns, in ppat format, with other users.

To avoid compatibility problems and minimize memory requirements, the company said it made Chameleon an application rather than a system extension. The first commercial Mac desktop-pattern editor, Thought



Logical Solutions' desktop-pattern editor application, Chameleon, includes a unique color picker.

I Could's Wallpaper, is a control panel.

While 7th Heaven lists for \$99.95, Chameleon will sell separately at \$59.95. Through March 31, the program will come with more than 120 patterns from ArtBeats' Marble and Granite CD-ROM pattern collection; thereafter Logical Solutions will offer the same patterns at \$19.95. Wallpaper owners with proof of purchase can get Chameleon for \$29.95.

The program will require System 7.

Logical Solutions Inc. is at 2124 University Ave., Suite 102, St. Paul, Minn. 55114. Phone (612) 659-2495; fax (612) 659-2498. □

CameraMan 2.0 now lets users do the talking

By Kirsten L. Parkinson

Santa Clara, Calif. — Vision Software International last month announced CameraMan 2.0, an upgrade that adds live voice-annotation capabilities.

CameraMan records screen activity, including cursor movements and menu selections, and saves them as QuickTime, PICT or PICS files. Version 2.0 is due to ship for \$149 this spring. Its new features will include:

► **Live voice annotation.** The new version will be able to record sound while a

Fifth Generation's CopyDoubler Finder accelerator set to fly solo

By Henry Norr

Baton Rouge, La. — Fifth Generation Systems Inc. last month released the first separately packaged version of CopyDoubler, a utility that brings speed and smarts to Finder copying.

The software bypasses the System 7 Finder's copying routines in favor of a new code that works two to 30 times faster, according to the company. It also makes emptying the Trash up to 10 times faster.

The control panel now is available in stand-alone form for \$59.95. Fifth Generation also continues to bundle it with AutoDoubler 2.0, the company's \$79.95 idle-time compression product, where it was first released last September.

Besides the performance boost, CopyDoubler capabilities include:

► **Smart Replace**, or copying only of files that differ when one group of files is copied into a folder with identically named items.

► **Optional verification** of files copied to removable cartridges or hard disks as well as floppies. The Finder normally verifies copies only when writing to floppies.

► **Security Erase**, or overwriting of deleted files to prevent their recovery.

► **AutoDoubler copy options**, which let users configure CopyDoubler either to expand AutoDoubler-compressed files or to leave them compressed as they are copied, depending on the destination media.

Demonstration versions are available from on-line services.

Fifth Generation Systems Inc. is at 10049 N. Reiger Road, Baton Rouge, La. 70809. Phone (504) 291-7221 or (800) 873-4384; fax (504) 295-3268. □

MakeTest 2.0 gets new formatting tools

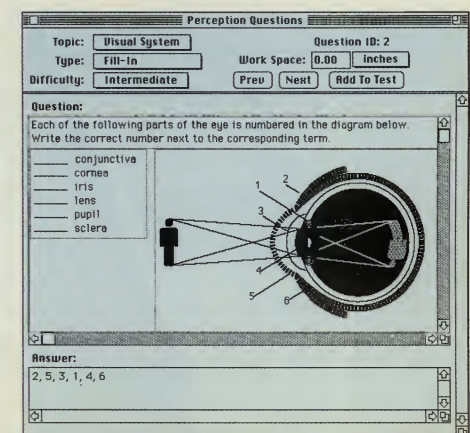
San Francisco — Mountain Lake Software last month updated its test-creation application with enhancements to its printing and formatting capabilities.

MakeTest 2.0, priced at \$149, lets users create tests with questions that include graphics. The order of the questions and the answers can be jumbled to give each student a different form of the test.

Users now can reformat questions and preview tests before printing them. Version 2.0 also can print color images. Fonts can be altered en masse with a new Replace Formats command.

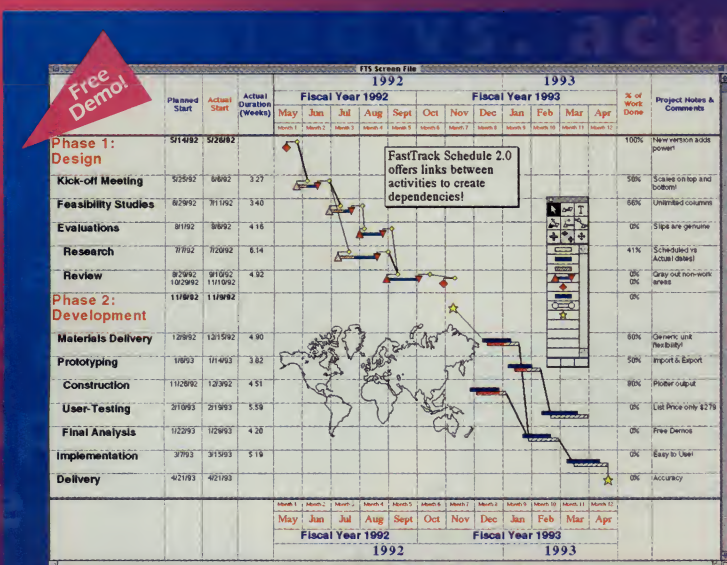
Upgrades are \$25. An unlimited-user site license is \$699.

Mountain Lake Software is at 298 Fourth Ave., San Francisco, Calif. 94118. Phone (415) 752-6515; fax (415) 752-6506. □



Mountain Lake Software's MakeTest 2.0 can incorporate graphics into test questions.

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Real World Tests Show MicroNet's Raven-040 Disk Array Continues as the Performance Winner!

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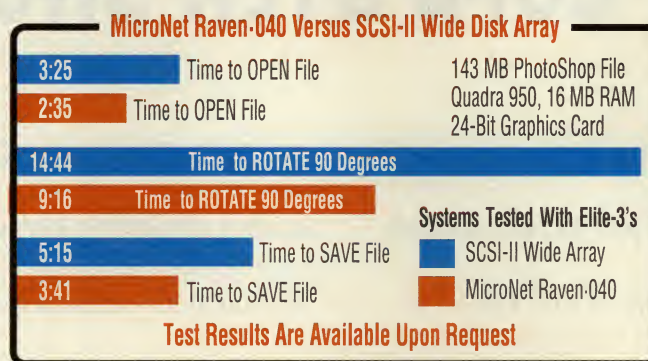
"It's easy to claim your system is the fastest, the simplest to use, or the most cost effective, but to convince my clients in this competitive field, I need to know the truth behind the claims, so I decided to run my own tests."

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"We found that the Raven-040 outperformed a similar capacity SCSI-II Wide Disk Array by at least one-third in real world tests. The Raven-040 was directly bootable out of the box, requiring no special INITs or mounting software.

"By using both internal SCSI ports of a Quadra 950, MicroNet's disk array left the PDS and all NuBus slots open for further expansion. The Raven-040 has been Production Proven™ for our clients for more than a year."

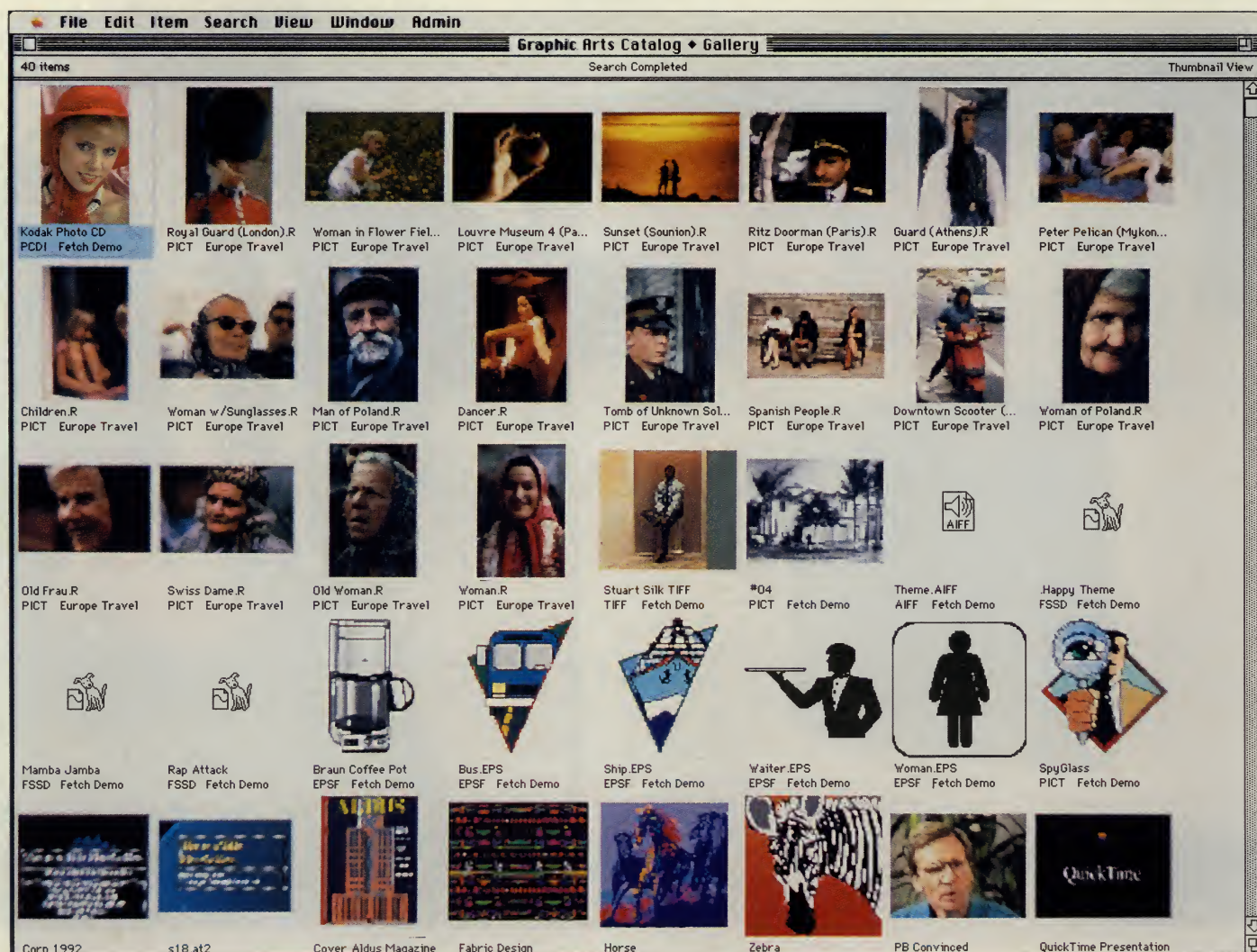
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Simply type in a keyword, and in seconds Aldus Fetch can find just the image or images you want. Once you've found

the thumbnail, you can copy, print or quickly preview the item at full resolution, even without the originating application. And Aldus Fetch can launch an application to edit an image without ever having to leave the catalog.

Not only that, Aldus Fetch features "drag and drop" cataloging for quick and easy

organizing of files, folders and volumes of images. What's more, Aldus Fetch only stores thumbnails and "pointers" to the original files, which help to keep the catalogs small.

In short, it gives you instant access to all of your digital media, so you can spend your time *creating* instead of hunting for images.

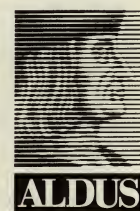
Aldus Fetch is designed to allow several users

to access a shared catalog simultaneously. At any moment you can browse, catalog, and retrieve up to 32,000 images, QuickTime movies,



clip art, presentations, sound files, and so on.

For a free trial version and a brochure, call 1-800-685-3507 toll free. We're eager to tell you all about new Aldus Fetch, the visual database program that finally answers the question that's haunted you for years, "Hmm. Now where the heck is that file?"



THE ART OF POWERFUL IDEAS™

Management

Being savvy about mail order can save your company cash

Mail order is a viable alternative to computer dealers. Knowing the ins and outs can help managers save time and money.

By Jeff Ubois

Payments are by credit card and shipping is overnight, but it's still called mail order.

Many information-systems managers have found that the benefits of mail order — fast, convenient delivery; large savings; money-back guarantees; and quality technical support — match or surpass those of local outlets.

"If it's not needed right away, then we usually buy mail order," said Bruce Saltzman, senior electronic production specialist at Addison-Wesley Publishing Inc. of Menlo Park, Calif. "It's a productivity issue: I can order what I want in five minutes by phone and have it the next day, as opposed to taking a couple of hours to go to a retail outlet."

Advantages of buying direct. Mail order got its start as the source of bargain prices, but it

also offers some hidden cost savings, such as guaranteed availability.

"When we are in the middle of a major project, a lot of times the dollar doesn't make the decision," Saltzman said. "It's sometimes a matter of who has the product in stock."

For buyers far from urban areas and well-stocked dealers, mail order is a link to civilization. "The proliferation of so-called mail-order outlets has made the ad pages of computer magazines into the superstores of today's rural consumer," said Thomas Seibold, a frequent mail-order buyer and a consultant in Berrien Springs, Mich.

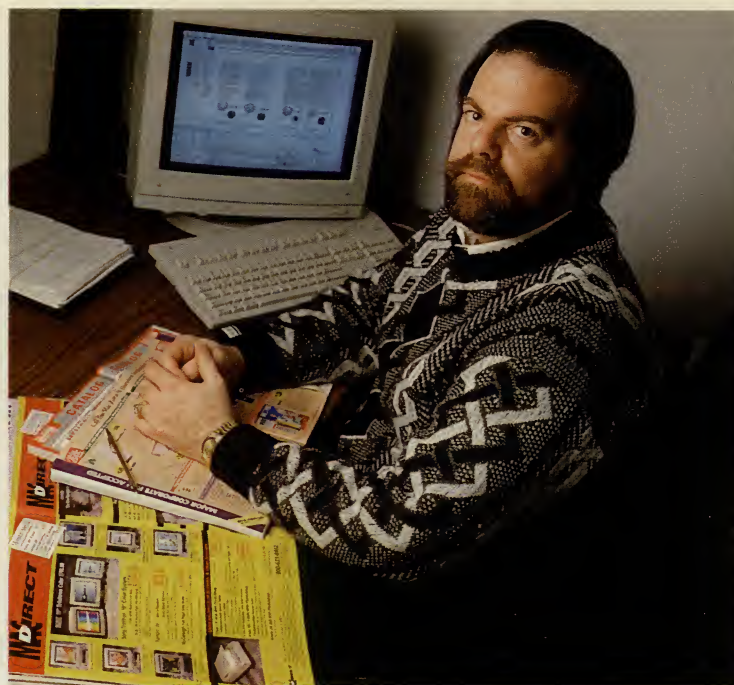
Bob Creager, owner of Creager Associates, a Waterville, Ohio-based design firm, agreed. "Our local software store is a discount supplier — but not consistently," he said. "Also, it doesn't have the range of product selection. Very often they'll say, 'We can order that for you,' but I can call myself and get it as cheap, or cheaper, the next morning."

Buying considerations.

Two-thirds of Macintosh software sold in the United States is through mail-order houses or comes directly from the manufacturer, according to Jeffrey Henning, editor of the PC Market Letter, published by BIS Strategic Decisions Inc. of Norwell, Mass. Buying software by mail has few risks — technical support comes directly from the software publisher, substitutions are out of the question, and shipping damage is never a problem.

But for hardware purchases, all those issues are potential problems. Hardware failures require physically returning the item to the vendor or manufacturer. Unfortunately, mail-order companies have less room for flexible return policies when dealing with hardware — replacing defective software or accepting a return has a relatively low cost, while hardware returns are more expensive.

Many peripherals and add-ons such as memory chips are essentially commodity products with little backing from the manufacturer. Moreover, the temptation to go for the lowest price can result in getting hardware that is marginal at best — whether SIMMs come from one supplier or another, or whether they run at 70 instead of 100 nanoseconds are subtleties



Bruce Saltzman, senior electronic production specialist at Addison-Wesley Publishing, said he uses mail order to avoid spending time traveling to a local dealer for products. He looks for mail-order companies that provide good support.

that don't tend to make it into most advertisements.

The modularity of computer components has led more people to buy parts by mail and do the pop-and-swap installations themselves. "For many Mac models, you only need a screwdriver to easily replace or install major components," Seibold said. "If you have to drive to a dealer and leave your machine there just to put in some SIMMs, many people prefer to do it themselves."

And for more-complicated installations, many of the better hardware specialty companies offer sophisticated technical support by phone.

Picking a company. Finding the right company is key to successful direct buying. A stable company with a long history, good prices, stock on hand, a reasonable return policy, technical support and a complete selection of products is the ideal, managers said.

"I go by how long I have been seeing their ads and how the ads are put together," Seibold said. "I'm looking for a company that is sophisticated and reasonable and nonhypeish; if it looks fly-by-night or if I see any hype, I will shy away."

Return policies vary widely and need to be investigated in advance. Some companies will take products back with no questions asked, while others may charge restocking fees, or delay refunds. "I always look for a money-back guarantee," Saltzman said.

Computer literacy is another quality to look for. "One thing that will attract me to a place is a high level of technical knowledge," Saltzman said. "Dealing with someone who knows what they are talking about feels better than dealing with people who are just order takers."

Saltzman said he added technical support to his buying criteria after one company was able to tell him how to reposition jumpers on a hard disk. "Tech support was not

See Mail order, Page 24

Calendar of Events

JANUARY

- 12-14** NetWorld, Boston. More than 365 exhibitors showing networking hardware, software and services. Contact Bruno Blenheim Inc. at (201) 346-1400 or (800) 829-3976; fax (201) 346-1602.
- 21-23** MacShow, Atlanta. Regional trade show focusing on local Mac-related companies. Contact The Show Management Co. Inc. at (215) 957-9111; fax (215) 957-9798.
- 25-29** PenExpo, San Francisco. Co-sponsored by Boston University Corporate Education Center and PenWorld. Contact Tom Zaralides at (508) 649-9731 or (800) 733-3593; fax (508) 649-6926.
- 26-28** Thermal Printing Conference, Monterey, Calif. The ninth annual conference will cover thermal technology, including bar coding and color dye sublimation. Contact BIS Strategic Decisions Inc. at (617) 982-9500 or (800) 874-9980; fax (617) 982-1724.

FEBRUARY


- 1-4** ComNet '93, Washington, D.C. Voice and data conference and exposition. Contact World Expo at (508) 879-6700 or (800) 225-4698; fax (508) 872-8237.
- 1-4** Object World, Boston. Conference and exposition focusing on the business and technical aspects of object technology. Contact World Expo at (508) 879-6700 or (800) 225-4698; fax (508) 872-8237.
- 7-10** Document and Image Management Systems Conference, Lake Buena Vista, Fla. Lectures, workshops and panel discussions on the latest imaging systems. Contact BIS Strategic Decisions Inc. at (617) 982-9500 or (800) 874-9980; fax (617) 982-1724.
- 16-18** Mobile 93, San Jose, Calif. Portable-systems show covering personal communicators, digital assistants, wireless messaging and pen-based computers. Contact Technologic Partners at (212) 696-9330; fax (212) 696-9793.
- 16-19** ATXPO 93, Santa Clara, Calif. The theme of this conference and exhibition is "PostScript Language Technology and Beyond." Contact Adobe Technology Exchange (ATX) at (408) 562-6104 or (800) 446-5622; fax (408) 562-6381.

Please submit notices of conferences, trade shows and other Mac-related events to Calendar, MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105, or fax to (415) 243-3650. No training or educational seminars please.

Questions to ask when buying by mail

Checking the details is important. Before you whisper your credit card number into the phone, ask:

- 1.** Is the product in stock? When will it be shipped? When will it arrive, and how much does shipping cost?
- 2.** Are there any hidden charges for packing, handling, insurance, credit card processing or anything else? (You shouldn't pay for insurance; it's the shipper's responsibility to see that your product arrives intact.)
- 3.** Is the price the same as in the advertisement, and is the model number the one you want? Is it compatible with your system? Are any extra parts required?
- 4.** What is the warranty on the product, and who provides it?
- 5.** What is the policy for returns?
- 6.** Is there a possibility you will be given a substitute product? Sellers are supposed to obtain your consent before shipping a substitute, but if substitutes aren't acceptable, say so.
- 7.** What is the name of the person taking your order?



*"The recently
upgraded cc:Mail
is the news of the
day in Mac e-mail."*
MacWEEK August 3, 1992

For Mac users the message couldn't be clearer:

When we introduced cc:Mail™ for Macintosh® Version 2.0, we knew we had a winner. And it's nice to see that MacWEEK® agreed so enthusiastically.

**The undisputed leader in
enterprise-wide connectivity.**

cc:Mail can send and receive text, files, graphics and faxes across all major platforms without the need for gateways or special configurations. When comparing it to the competition, MacWEEK said that "cc:Mail 2.0 is the winner if compatibility across platforms and ease of set-up are your chief criteria."

Features your Mac users will love.

Unlike Quickmail or Microsoft® Mail, cc:Mail displays file attachments as icons. Just double-click to launch the file. Or drag-and-drop to move or copy the file. And unlike the competition, cc:Mail lets you format your messages with a text ruler and highlight them with color.

And a host of powerful and unique features.

cc:Mail has a powerful Message Finder that lets you search through all your messages according to subject, text, address, date, size, priority or contents. Because privacy is important in business communications, cc:Mail encrypts your messages so that only the recipient has access. Quickmail, on the other hand, doesn't encrypt messages so virtually anyone can read your mail. And cc:Mail was designed to grow with your organization, so you can easily have 5 to 500,000 users.

Version 2.0 is truly an exciting new product. Judge for yourself by calling toll-free to find out what over 2 million users already know.

Call **1-800-448-2500** for your FREE demo disk of the cc:Mail for Macintosh Platform Pack.

Here's what else the editors
of MacWEEK said:

About cc:Mail:

"Setting up and maintaining a cross-platform system with this package is a dream, and the feature set of the client is top-notch."

"Actions that a mail user performs frequently—creating a new message and reading the latest message—are always a click away."

About the competition:

"Microsoft Mail and WordPerfect® Mail both suffer from inordinately complex cross-platform setup processes; understanding these systems is a major commitment."

"QuickMail was the only package whose mail server crashed during testing... (its) spotty reliability for Macs and PCs was the primary impetus for the upgrade... so this evidence of continued problems concerns us."

Lotus

cc:Mail for Macintosh

Mail order

From Page 22

even a consideration before that, but that place is now our source for hard disks. I could buy less expensively elsewhere, but I chose not to after that call," he said.

There are also some danger signals, such as requests for checks before shipping or frequent busy signals on the technical-support line. "An immediate red flag is if they want the money upfront before shipping the prod-

uct," Saltzman said. "That usually means they are not even stocking inventory, and if the business is that unstable, I don't understand how they can compete."

Finally, before making a large order, it's worth doing a trial order of noncritical items, such as disks. Mary Coon, production supervisor for Lucky Stores Inc. of Buena Park, Calif., said, "I bargain shopped and looked for better prices, but I also did a test order to see if the response was good."

Making the buy. Most of the problems associated with buying by mail are in the details, so it's important to check them all (see checklist, Page 22).

Given all the things that can go wrong, it's a good idea to retain some leverage with the mail-order company after making the purchase, so pay with a credit card or a purchase order, or take delivery c.o.d. "We don't pay for anything we haven't received," Saltzman said.

The Mail Order Rule and the Fair Credit Billing Act help protect the rights of mail-order consumers (see story, below).

Mail-order veterans offer a few other tips for trouble-free buys. "When I am buying mail order, I stick with branded products, so if the mail-order house fails I have recourse with the factory," Saltzman said.

Creager said: "Plan for the worst. Never expect service beyond the normal factory warranties, and always keep the receipts. Buy by American Express or credit card because you have a warranty there."

Once a good relationship is established with a supplier, occasional large purchases are better than frequent small ones. "It makes sense to consolidate purchases because shipping charges are almost the same whether you're buying one item or 10," Saltzman said. Consolidation also reduces internal paperwork and administrative costs.

It's worth checking whether the mail-order company charges you state sales taxes and whether your state requires you to pay taxes on mail-order purchases.

Finally, if you're making frequent large purchases, look for volume discounts and see if your supplier will match competitive pricing. "Don't be afraid to indicate you have a lower price available to you because sometimes the vendor will agree to match a price to stay competitive," Saltzman said. □



While the cursor may hop or skip with some trackballs, Turbo Mouse® has always been known for its ultrasmooth movement.

Now, the latest version of Turbo Mouse is known for something else—jumping. Our new Brilliant Cursor technology makes it possible.

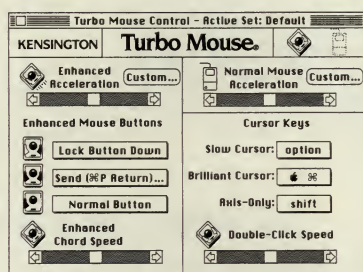
With it, you can move the cursor instantly to predefined HotSpots on the screen, such as the File and Edit menus and the Trash icon.

First, you define your HotSpots. Then, click a button and move the ball in the direction you want to go. The cursor automatically jumps to the predefined HotSpot. You can even program in different HotSpots for different applications and for different users.

And Brilliant Cursor technology is not all that's new with Turbo Mouse 4.0. Also new is advanced acceleration with three levels of control and Enhanced Mouse Buttons that let

Introducing Turbo Mouse 4.0

With the all new Brilliant Cursor™ technology, you can actually make the cursor jump to any spot on the screen.



you execute one of seven programmable commands. For example, send a Print command with just one click using Send String. Or move the cursor with ultra precision using Slow Cursor. Even save different combinations of commands for each of your favorite programs.

Then there's the award winning Turbo Mouse hardware. Hardware that has won more awards than any other input device.

Hardware that has consistently been voted "Best Input Device" by Macintosh

users worldwide. Features include a large comfortable ball, "easy-click" buttons, long-lasting precision stainless steel bearings, and two ADB ports for chaining other devices.

Turbo Mouse 4.0 is fully System 7.0 compatible. To receive information by fax, call 800-535-4242, dial 82 and request document 320. For general information, call 800-535-4242. Outside the US, 415-572-2700.

KENSINGTON

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FTC rules on mail order

The \$211 billion mail-order industry is regulated by the Federal Trade Commission. Its Mail Order Rule governs purchases that are ordered or paid for by mail; the Fair Credit Billing Act applies if you order over the phone and pay by credit card.

The Mail Order Rule says:

- ▶ Orders must be shipped within 30 days unless the advertisement clearly indicates it will take longer or the order is to be paid for on delivery.

- ▶ If there is a delay, the seller must offer you the chance to cancel the order with a refund. If you consent to the delay, you still can cancel the order any time before the item is shipped.

- ▶ If you cancel an order that has already been paid for with a check or money order, the seller must refund your money within seven business days.

Under the Fair Credit Billing Act:

- ▶ You can withhold payment of your credit card bill until a dispute is resolved, provided you send written notice to the creditor within 60 days of receiving the bill.

- ▶ If you cancel an order, your account must be credited within one billing cycle. You are not obligated to accept a voucher, swap or credit in place of a refund, and substitutions require your approval.

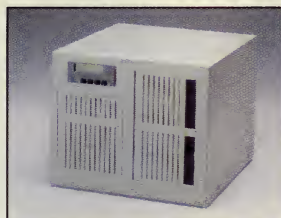
- ▶ You can take the same legal actions against the credit card issuer as your state law lets you take against the seller. For example, if your state law permits you to withhold payment for defective merchandise, or pay and sue for a refund, you may be able to withhold payment to the credit card issuer. The FTC advises consumers to get legal advice before stopping payment in such a dispute.

— By Jeff Ubois

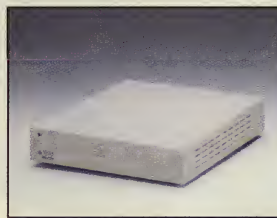
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PersonalArrays offer cost-effective RAID 0 or 1 solutions for color prepress, small networks and workstations.

PROTECT YOUR DATA WITH EASE

Go ahead. RAID your network. MASS Microsystems can help. Our ultra high performance disk arrays give you monumental storage capacity with singularly superior security. On-line fault tolerance guarantees it. With Mean Time Data Loss at an incredible 833 million hours, you won't ever need to lose sleep over data integrity. Think of our MASterArray as the ultimate five-drive security blanket for your Mac network. And at a price that won't make anyone whimper.

Today's large graphics, multimedia, file servers and massive networks require the most advanced RAID technology. Financial. Medical imaging and records. Engineering. Color prepress. When your mission critical data is on the line, you won't want to settle for anything but the best.

Our MASterArray™, a powerhouse of performance, supports RAID 0, 1, 3 & 5 all in the same box and controller. You get all the benefits of SCSI, combined with RAID reliability. A DAT drive is included to back you up. "Hot swappable" drives and power supplies mean zero down time. *It doesn't get any easier or safer than that.*

The PersonalArray™ with two drives gives you a more cost-effective alternative. You get peak power and performance and RAID 0 or 1. Built-in flexibility lets you modify either system when your needs change. And let's face it, it's a changing world out there.

Don't put your priceless data at risk. Go ahead, call MASS Microsystems at 1-800-522-7979. You'll be glad you did. Because

you don't even want to think about crashes. Down time. Data loss. Data recovery. Or dangerously distraught network users desperately seeking their missing data.



Lose the risk. Maybe it's time to RAID your network for security purposes.



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Banyan ships Vines 5.5, ENS NetWare bundle

Mac users must wait for ENS support

By April Streeter

Westboro, Mass. — Banyan Systems Inc. this week will ship a new version of its Vines operating system and a bundle of Vines services for Novell Inc.'s NetWare, but Mac users won't be able to benefit from this union of erstwhile rivals until later this year.

Vines 5.5 includes StreetTalk III, a revision of Banyan's directory services; adds support for more types of wide-area connections among distant Vines servers; and abolishes feature discrepancies between Version 4.11 and 5.0. Vines' directory, mes-

saging and network-management services are now also available to NetWare users on IBM PCs or compatibles through Banyan's Enterprise Network Services (ENS), which recently shipped.

Macs in mixed environments won't enjoy the fruits of this mixture of Novell and Banyan technologies until later this year, however, because ENS for NetWare currently does not include Mac support. NetWare Mac clients cannot use ENS services except for Intelligent Messaging, nor will Mac Vines clients be able to use StreetTalk to search for Novell-connected resources.

In Vines-only networks, however, Mac clients will be able to use StreetTalk additions such as:

See Banyan, Page 30

MacLAN Connect wrapped in Gold

By Nathalie Welch

San Francisco — Miramar Systems Inc. has consolidated its product line to provide Mac users with a cheaper way to tap PC LAN resources.

At Macworld Expo last week, the company introduced MacLAN Connect Gold, which offers capabilities previously found in three now-discontinued Miramar products. MacLAN Connect Gold gives Mac users on LocalTalk, token-ring or Ethernet networks access to PC LAN-based file and print services via the Chooser.

The package also can convert an IBM PC or compatible into an AFP (AppleTalk Filing Protocol)-compliant AppleShare file server.

MacLAN Connect Gold, available now, is priced at \$695 per server with support for unlimited users. It replaces the \$1,495 MacLAN Connect F/P unlimited file and print software, the \$695 MacLAN Connect F/P Lite limited file and print software, and the \$495 MacLAN Connect Lite limited print-services-only software.

In addition, MacLAN Connect

See MacLAN, Page 30

Mac DataClub upgraded; DOS version planned

By April Streeter

Provo, Utah — Novell Inc. is planning Windows, DOS and Unix versions of DataClub, the virtual-server software for Macintosh networks that it purchased last year with the goal of providing connectivity for small cross-platform workgroups.

While Novell develops the new versions — which may come as early as this year — the company later this quarter will demonstrate its commitment to current DataClub users by releasing a minor upgrade.

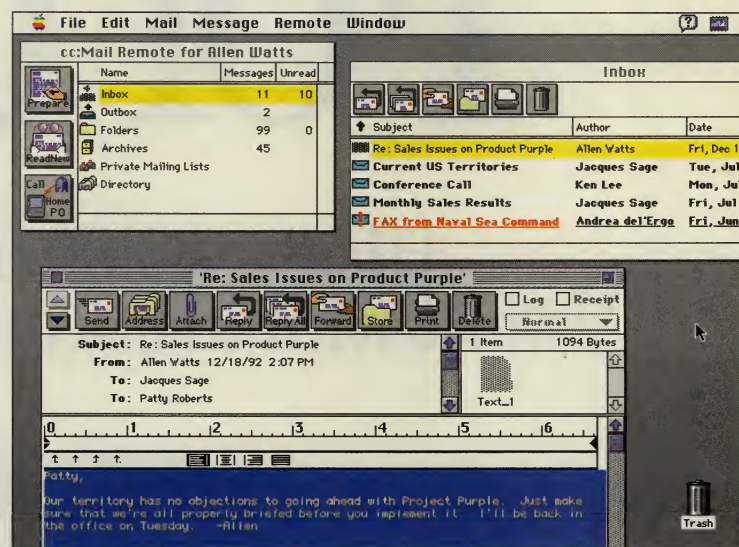
DataClub is available in a \$795, 10-user, Classic version and a \$1,395, 50-user Elite package. Both products distribute server functions and files to multiple Macs on AppleTalk networks. The Elite version also lets a network administrator use any Mac as a dedicated server.

Although Novell did not add any new features to DataClub 3.0, Matthew Bogumill, beta-program manager, said users may see some performance boosts from the streamlining of many of the software's code algorithms.

When Novell bought DataClub last year from International Business Software Inc. of Sunnyvale, Calif., some users were afraid the product would be abandoned or subsumed by Novell's flagship product, NetWare.

"We use [DataClub] as a higher-performance replacement to AppleShare," said Jim Matthews, senior programmer in computing services at Dartmouth College in Hanover, N.H., and a Version 3.0 beta tester.

See DataClub, Page 30



cc:Mail Remote for Macintosh 2.0 has most of the features of its LAN-based sibling and lets users create mail off-line for later transmission.

cc:Mail universe is expanding: Mac Remote emulates sibling

By Nathalie Welch

San Francisco — cc:Mail last week brought remote Macintosh users into its electronic-mail universe when it began shipping cc:Mail Remote for Macintosh 2.0 at Macworld Expo here.

Priced at \$295 per machine, the package provides off-site desktop or PowerBook Mac users with features almost identical to those of the LAN-based version of cc:Mail. The new product is the company's first remote mail client for the Mac. While the Remote product is new, it boasts the same version number as its older sibling.

Like the LAN-based version, the Remote package accesses a central cc:Mail message database stored on a file server to enable Mac users to exchange mail containing text, graphics, sounds, file attachments

and faxes with co-workers on DOS, Windows, Unix or OS/2 platforms.

In addition, the Remote package lets users create mail off-line and place it in an out-box for later batch-mode transmission, sending and retrieving mail simultaneously over standard telephone lines. Users can specify message-transmission times.

"We spent a lot of money initially to train our employees to use the LAN version of cc:Mail," said Jim Arcure, systems integration manager at Colgate-Palmolive Co. in New York. "But because the two packages are so similar, remote users were up and running almost immediately."

The Remote package offers a number of features included in cc:Mail's Macintosh Platform Pack 2.0, including the Message Finder, which lets users search the text of messages in their in-box, folders or archives using a variety of criteria; drag-and-drop support for file attachments, addresses and entire messages; and a customizable user interface.

Free dial-in server software is provided with the new package, or customers can use the \$1,295 cc:Mail router; both require dedicated IBM PCs or compatibles. A global directory view lets users see everyone in one directory, as well as a cc:Mail Remote directory that can be synchronized on the LAN through cc:Mail's Automatic Directory Exchange.

cc:Mail, a division of Lotus Development Corp., is at 2141 Landings Drive, Mountain View, Calif. 94043. Phone (415) 961-8000; fax (415) 961-8400. □

Ethernet-only router from Cayman

By April Streeter

Cambridge, Mass. — Responding to the increase in Ethernet-based Mac networks, Cayman Systems Inc. will unveil its first Ethernet-only router at this week's NetWorld 93 Boston.

The GatorBox EX, due next month for \$3,495, will link AppleTalk workgroups on Ethernet LANs with Ethernet backbones. Cayman has incorporated its fastest processor, a 40-MHz 68030, into

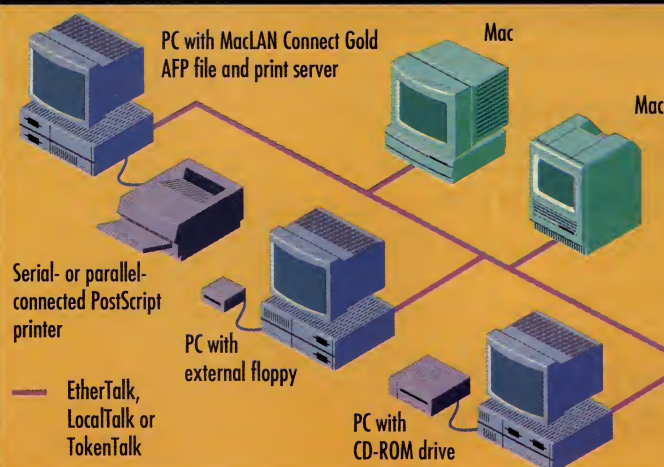
the new router to address the high performance demands of Ethernet.

Compatible Systems Inc. of Boulder, Colo., is also soon expected to ship an Ethernet-to-Ethernet router that uses a RISC processor and will be priced at \$2,995.

GatorBox EX will route AppleTalk, TCP/IP and Digital Equipment Corp.'s DECnet Phase IV. The router will include Mac-based management software with

See Cayman, Page 30

MacLAN puts Macs on PC LANs



NEVIN BERGER

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No One Has A More Complete Family Of Ethernet Products Than Asanté.

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tem, all you have to do is turn to the proven leader in Macintosh® networking. Asanté™.

A Full Line Of Ethernet Solutions.

At Asanté, excellence runs in the family. It shows in everything we do, from the industry's first smart hub with



both in-band and out-of-band network management for both Macs® and PCs using the same GUI, to AsantéPrint, our new Ethernet-to-LocalTalk™ converter for laser printers.

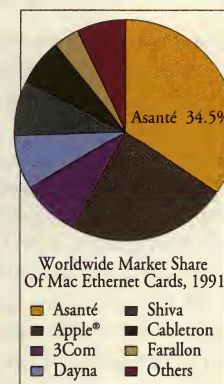
In addition, the Asanté family features a full line of non-intelligent 10BaseT hubs with 8 or 12 ports. And the widest range of

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So if you want a picture-perfect Ethernet network, all you need to remember is Asanté. We also offer a full line of Token Ring® products for the PC and Macintosh. Resellers:



Source: International Data Corporation, June 1992



ALL THE RIGHT CONNECTIONS™

Asanté products are available from Ingram Micro, Merisel and Tech Data.

ISDN trio: Two cards, one router

NuBus cards come from OST, Euronis

By April Streeter

Chantilly, Va. — Two companies recently reopened the market for adapters that let individual Macintoshes communicate via ISDN.

OST Inc. last month shipped MacSnet, a \$1,095 adapter card. Meanwhile, Euronis said it will begin U.S. distribution of the \$995 Planet-ISDN adapter, which has been available in Canada since 1991.

Both cards allow individual NuBus Macs to directly connect to an ISDN (Integrated Services Digital Network) or other high-speed synchronous or asynchronous networks, such as X.25. An ISDN driver to work with the OST card is an additional \$200.

Both MacSnet and Planet-ISDN support Basic Rate ISDN, which consists of three channels capable of transmitting a mix of voice and image data. Both cards use the most recent standard for ISDN, National ISDN-1, as well as support AT&T Co.'s and Northern

Telecom Inc.'s versions of ISDN.

Both companies' cards offer optional routing and communications software based around Apple's AppleTalk Internet Router and designed by French company Access Privilege SA. The software, called The Link, has an administration module to manage remote ports and a desk accessory for easy connection to ISDN.

Last year Apple stopped selling its own ISDN adapter and licensed manufacturing rights to several U.S. vendors, including Teleos Communications Inc. of Eatontown, N.J.

Thus far these vendors have not shipped a product. A Teleos spokesman said manufacturing plans are on hold "until the volume picks up" for ISDN applications. But OST and Euronis said ISDN's wide acceptance in Europe makes for a viable and growing market here and abroad.

Euronis is at 2, rue des Jeuneurs, 75002 Paris, France. Phone (33) 140-39-87-50; fax (33) 140-39-87-55.

OST Inc., a division of OST SA, is at 14225 Sullyfield Circle, Chantilly, Va. 22021. Phone (703) 817-0400 or (800) 678-9678; fax (703) 817-0402. □

Ethernet-to-ISDN router from Engage

By April Streeter

Aptos, Calif. — Engage Communication Inc. last week began shipping two single-protocol routers that link far-flung AppleTalk or EtherTalk networks via ISDN.

The \$1,995 SyncRouter-ISDN provides a single port to connect two LocalTalk network segments over an ISDN (Integrated Services Digital Network) line, passing packets at speeds of up to 64 Kbps.

The ExpressRouter-ISDN, priced at \$2,495, links two 10BASE T Ethernet-connected Macintosh networks. The ExpressRouter-ISDN can transmit data at speeds of up to 128 Kbps using the device's inverse multiplexing option, which can divide a data stream between the router's two ports, according to the company.

A plethora of competing standards and limited availability has slowed adoption of ISDN, but according to Engage, sites requiring frequent transfer of large data files will find the cost of leasing an ISDN line comparable to using a slower modem and standard analog phone line.

Engage's two new routers interoperate with the company's LocalTalk and Ethernet routers for switched-56-Kbps lines so that users in locations where ISDN is not available have the option of leasing a switched-56 line. The ISDN routers automatically adjust to send or receive from the slightly slower switched-56 line.

Engage also reduced the cost of its LocalTalk switched-56 router, the SyncRouter-LTNT, to \$1,795 from \$2,495.

Engage Communication Inc. is at 9053 Soquel Drive, Aptos, Calif. 95003. Phone (408) 688-1021; fax (408) 688-1421. □

Vicom cuts \$3,000 from price of development environment

Host connectivity added to product line

By Nathalie Welch

San Francisco — Vicom Technology Ltd. last week slashed the price of the development environment that anchors its line of terminal-emulation and front-ending tools by 85 percent.

The company also upgraded its entire product line to Version 4.3, adding several new host-connectivity options. Available now, the products made their debut at last week's Macworld Expo here. They will be offered free to current users.

Vicom Pro, the company's full communications-development package, is now priced at \$495, reduced from \$3,500. Enhancements to the Pro version's front-end development tools include extensions to the Vicom Pro SuperScript language and the addition of a hierarchical outline display of macros, submacros and windows in the program's Project File Manager.

The company said it also has made a variety of improvements to DataScope, a feature that lets

technically qualified users analyze data sent to and from the host.

All members of the Vicom family except the runtime version now include both LAT (Local-Area Transport) and TCP/IP Telnet tools for connecting to DEC VAX and Unix hosts, as well as new FTP (File Transfer Protocol) server software.

Two additional Unix host emulations, Wyse50 and Wyse60, and a DG400 emulator for Data General Corp. minicomputers now come with the full Vicom line.

Vicom MultiTerm, a midrange package that includes the enhanced DataScope and an interface editor, is now priced at \$245 or \$295, depending on the emulations included. Prices previously ranged from \$295 to \$345.

Vicom Runtime is now \$195, down from \$245.

Support for Vicom's products is handled by The Fischer Group of Chino, Calif., and U.S. distribution is now handled by SofMart Inc. of Exton, Pa.

Vicom Technology Ltd. is at 107-319 W. Pender St., Vancouver, British Columbia V6B 1T4, Canada. Phone (604) 684-9517; fax (604) 684-9516. □

MacLAN

From Page 28

Gold adds support for Microsoft's Windows for Workgroups (WfW). This lets the package act as a dedicated gateway to provide Mac services for a Windows for Workgroups LAN. WfW clients must run Microsoft's Windows for Workgroups Connection to access

DataClub

From Page 28

"I get the impression that if we want even higher performance, which we do, it would have to be NetWare, which we don't want."

Steve Nelson, Novell Macintosh product manager, said the company is positioning DataClub for smaller heterogeneous workgroups, a strategy that will be aided by the introduction of DOS, Windows and Unix versions. "It's true NetWare and DataClub are heading down a common path, but they won't merge in '93," Nelson said.

Instead, Nelson reiterated the company's plan to keep adding to DataClub, one example of which is incorporating the ability to add remote and mobile users.

Upgrade pricing for Version 3.0 has not been set.

Novell Inc. is at 122 East 1700 South, Provo, Utah 84606. Phone (801) 429-7000 or (800) 638-9273; fax (801) 429-5555. □

Mac files stored on the server.

The new package also functions as an electronic-mail gateway, enabling Mac clients using cross-platform E-mail packages to exchange mail with compatible PC clients.

In a later release, due in the second quarter, Miramar plans to expand MacLAN Connect Gold's support for PostScript printers on AppleTalk networks to include support for non-AppleTalk PostScript printers.

Miramar also dropped the price on its MacLAN Connect file-sharing software from \$995 to \$495 for an unlimited site license.

Miramar Systems Inc. is at 201 N. Salsipuedes, Suite 204, Santa Barbara, Calif. 93103. Phone (805) 966-2432; fax (805) 965-1824. □

Cayman

From Page 28

zone hiding and filtering features that let administrators restrict access to network services. The router also will include Cayman's method of encapsulating AppleTalk within Internet Protocol packets to pass them over TCP/IP network segments.

"I've used GatorBoxes before, and while they worked flawlessly, the performance wasn't good enough when running [them] up to our Ethernet," said Brian Perry, systems manager at Vertex Pharmaceuticals of Cambridge, Mass., a

GatorBox EX beta site. "With a faster box, I'll be able to effectively segment parts of the network."

The GatorBox EX can be installed with Cayman's GatorShare gateway software, which lets Mac users share files with Unix-based workstations and allows Unix workstations to use AppleTalk printers. When purchased with GatorBox EX, GatorShare costs \$995; if purchased separately the price is \$1,995.

Cayman Systems Inc. is at 26 Landsdowne St., Cambridge, Mass. 02139. Phone (617) 494-1999 or (800) 473-4776; fax (617) 494-9270. □

Vicom 4.3 product family

PRODUCT	INCLUDES	PRICE
Vicom Runtime	TTY, VT320, VT220, VT52/100/102, PC-ANSI, DG211 and DG400, Wyse50 and Wyse60, ADDS Viewpoint 50	\$195
Vicom MultiTerm	Interface Editor plus above emulations	\$245
Vicom MultiTerm340	All of the above plus VT340 and VT241 emulations	\$295
Vicom MultiTerm7800	All of the above plus VIP7800 and VIP7824 emulations	\$295
Vicom Pro	All of the above plus the SuperScript Development E Environment and SuperScript DA	\$495

Banyan

From Page 28

► **Richer object searches.** Users can search out other users or network resources using a variety of attributes, rather than just the StreetTalk name. Attributes are specified by the administrator and can be indexed. StreetTalk performance has been improved, according to Banyan.

► **Group moves.** This option lets administrators transfer data about groups of users or resources among Vines servers. For example, StreetTalk now can update a directory in Dallas when a new user is added in Boston.

► **Synchronized directories.**

StreetTalk III provides a new application programming interface that allows administrators to set up synchronization of StreetTalk directories with directories from other applications, such as WordPerfect Office, or other directory services, including Apple's upcoming OCE (Open Collaboration Environment).

Upgrades to Version 5.5 are free for sites under Banyan's subscription program. Others will pay according to the number of users supported.

Banyan Systems Inc. is at 120 Flanders Road, Westboro, Mass. 01581. Phone (508) 898-1000 or (800) 828-2404; fax (508) 898-1755. □

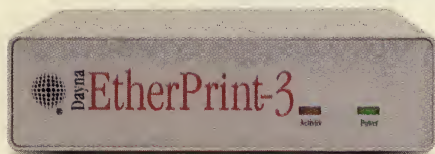


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any LocalTalk printer directly to any Ethernet network. And for the ultimate in flexibility, EtherPrint-3 Plus connects up to four printers or other LocalTalk devices, with no setup or configuration required.

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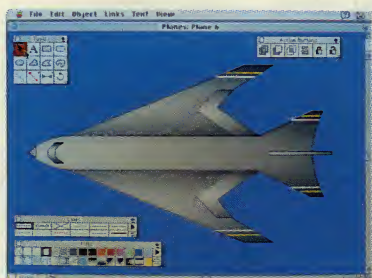


We know what you're thinking: "revolutionary new drawing program... rrrright, I've heard that before." But consider, if you will, a couple of the aforementioned 43 new features: the Symmetrigon™ and the Connectigon.™

They're perfect examples of how IntelliDraw makes drawing faster, easier, and more importantly—exciting.

With the Symmetrigon, you simply draw one side of an object and the other side (or sides) are drawn automatically. On other programs, you'd have to draw each side one step at a time.

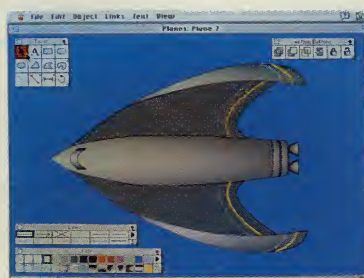
As for the Connectigon, it lets you change dimensions and perspective almost instantly (for an example of what we're talking about here, take a look at the plane illustrations, above). And remember that with other drawing packages, modifications such as these would be laborious at best.



We could go on and on. After all, that's only two of the 43. But suffice it to say:

With IntelliDraw, you also get to take advantage of things like alignment guides and alignment frames (which automatically align and maintain spacing of multiple objects even if you decide to rearrange, add, or subtract objects in a drawing), master objects

(which save a ton of highly-coveted time by letting you change multiple cloned objects simply by changing the one master item), and, as they say, much, much more.

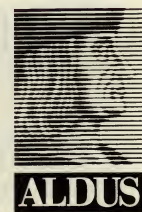


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T H E A R T O F P O W E R F U L I D E A S ™



- ▶ Graphics applications
- ▶ Multimedia



Quark delivers newspaper system

Database tracks files for XPress publishers

By Carolyn Said

Denver — Quark Inc. has delivered an open-architecture, Mac-based newspaper publishing system designed to replace proprietary hardware solutions.

Quark Publishing System (QPS) integrates QuarkXPress, the company's \$895 desktop publishing program, with editorial-management and text-editing software.

"QPS lets us track pages and control text on the pages, and it does it for a more reasonable cost than hardware-intensive proprietary systems," said Rob Perschau, newsroom systems manager at the Kansas City (Mo.) Star. Perschau said the Star, which beta tested QPS for its "soft" news pages, plans to install the system over the next few months.

Carol Hartman, graphics system manager at the Christian Science Publishing Society in Boston, which publishes the Christian Science Monitor, said, "We really like the seamless integration with XPress."



QPS stores information about stories and other page elements in a QuarkDispatch database. Users of QuarkXPress or the QuarkCopyDesk word processing program can query the database by a variety of criteria and access articles to be edited.

"Without QPS, after we edit stories in Atex and send them to Quark, we can't make any more changes," Hartman said. "With QPS, an editor can change copy after the story is laid out; the system will notify the layout person and let that person automatically update the story."

QPS, which runs over an AFP (AppleTalk Filing Protocol)-compatible network, comprises:

▶ **QuarkDispatch**, a server-resident database that tracks files

created by users of the system. It comes with DispatchAdministrator, an application that lets system managers configure workgroups, sections and user privileges for QPS; DispatchPlanner, a spreadsheet that lets users assign layouts, articles and other page elements to workgroup members and track the files' progress through production; and DispatchFileManager, an application that lets users search, delete and archive Dispatch files and revisions.

▶ **QuarkCopyDesk**, a word processing and editing application that lets writers and editors create and modify articles, then file them in the Dispatch database where they are accessible to other QPS users. Besides offering standard word processing features, CopyDesk lets users annotate text with notes; view word, character and line counts for exact copyfit-

See Quark, Page 36

Infini-D throws new 3-D curves, adds Type 1 and animation tools

By Neil McManus

San Francisco — Specular International Ltd. next month will ship a new version of Infini-D that adds Type 1 font support and advanced animation controls.

Infini-D 2.5, introduced at Macworld Expo here last week, will be \$995, the same price as Version 2.0 of the modeling, rendering and animation software.

The new version will let users apply bevels to text and imported Encapsulated PostScript outlines. It will come with several preset bevels that can be reshaped and resized. Users also will be able to morph between bevels.

An enhanced animation sequencer will allow users to link and rearrange objects in collapsible outlines akin to the System 7 Finder. Users also will be able to preview a section of an animation interactively.

A new feature called Animation

Assistant will give users control over complex tasks, such as smoothing the velocity of a camera motion over an entire animation. Cameras also can bank automatically and track objects.

Other new features include support for QuickTime movies as backgrounds and a new surface called Natural Wood.

Upgrades are free to users who purchased Version 2.0 after Dec. 15, 1992. Other Infini-D 2.0 users can upgrade for \$89 before April 15 and for \$129 thereafter; users of previous versions can upgrade for \$149 before April 15 and \$199 thereafter.

Specular also has released two new volumes in its Replicas series of surface textures. Volume 3: Starter Surfaces and Volume 4: Exotic Woods are \$179 each.

Specular International Ltd. is at 233 N. Pleasant St., P.O. Box 888, Amherst, Mass. 01004-0888. Phone (413) 549-7600; fax (413) 549-1531. □

Cricket Draw III to leap ahead: Update lines up new PS tools

By Kirsten L. Parkinson

San Francisco — Computer Associates International Inc. last week introduced Version 2.0 of CA-Cricket Draw III, an object-oriented PostScript drawing program that lets users edit artwork in PostScript code as well as graphically.

Version 2.0, which made its debut at Macworld Expo here, is scheduled to ship in March for \$249, the same price as the current version. Its new features will include:

▶ **Bound-text editing.** Users will be able to type, view and edit text directly on a curved path. Previous versions of CA-Cricket Draw required users to unbind the text before editing it, and bound text could be viewed only in printed form.

▶ **PostScript code embedding.** The new version will let users

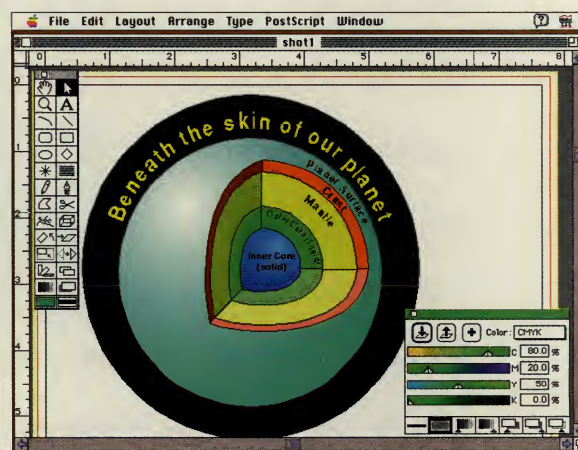
include PostScript code with a CA-Cricket Draw object when they copy it into another program, such as Microsoft Word or QuarkXPress. This will ensure optimal output when the object is printed to a high-resolution PostScript device.

▶ **Text manipulation.** Version 2.0 will convert text to Bezier curves, so users can rotate, skew and resize type or fill it with blends.

Other new features will include the ability to manipulate imported Encapsulated PostScript images, a 100,000-word spelling checker and thesaurus, and an Extrude tool that adds depth to objects. It is compatible with System 7.

Upgrade prices have not yet been determined.

Computer Associates International Inc. is at 1 Computer Associates Plaza, Islandia, N.Y. 11788-7000. Phone (516) 342-5224; fax (516) 342-5329. □



CA-Cricket Draw III Version 2.0 will let users view and edit bound text on screen. Previously, bound text could be viewed only in printouts.

Truevision card pumps up video, CD sound

By Neil McManus

Indianapolis — Truevision Inc. this month will ship Bravado24, a video-production board that will offer 24-bit-color graphics, video in a window and CD-quality audio.

The NuBus board, priced at \$2,195, also will digitize video from any composite or S-video source to QuickTime movies. It will come with 1.5 Mbytes of video RAM, allowing it to capture 160-by-120-pixel movies at 30 frames per second.

An optional \$1,995 daughtercard uses an LSI Logic chip and JPEG (Joint Photographic Experts Group) compression to capture

and play 640-by-480-pixel movies at 30 fps. Truevision also sells Bravado24 with the JPEG daughtercard for \$3,995.

Bravado24 will bring 24-bit color to a 13-inch display at a resolution of 640 by 480 pixels. It will automatically switch among sources as well as formats such as NTSC, PAL (European) and SECAM (French). It offers a live video window scalable up to 640 by 480 pixels.

The new Truevision board also will be able to record CD-quality sound to hard disk at 16-bit fidelity. It will handle audio through a dedicated digital signal processor,

freeing the Macintosh's CPU for other tasks.

Bravado24 will come bundled with VideoFusion Inc.'s \$895 VideoFusion, a QuickTime special-effects program.

Functionally and technologically, the Bravado24 is almost the mirror image of RasterOps Corp.'s \$1,999 MediaTime board, said Dennis Collins, Truevision director of marketing services. RasterOps is the parent company of Truevision.

Truevision Inc. is at 7340 Shadeland Station, Indianapolis, Ind. 46256. Phone (317) 841-0332; fax (317) 576-7700. □

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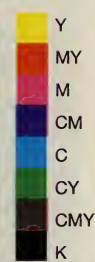
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Browser thumbs through media files

By Ian G. Jacobs

San Francisco — Impace Systems Corp. last week unveiled Kudo Image Browser, an application for cataloging, browsing and retrieving multimedia files.

The \$295 program, introduced at Macworld Expo here, is scheduled to ship this quarter. Kudo will let users catalog Eastman Kodak Co.'s Photo CD images; QuickTime movies; Mac graphics created in formats such as PICT, TIFF, Encapsulated PostScript and Adobe Photoshop; and IBM PC and compatible formats, such as PCX, GIF (Graphic Interchange Format) and BMP. It also will support Apple XTND filters.

The retrieval system is based on visual thumbnails that can be appended with text comments. Kudo also will support text searches of these notes. Each catalog will be able to contain up to 32,000 thumbnails.

The software will be able to catalog files stored on CD-ROMs, the user's hard disk or networked volumes. Double-clicking on the thumbnail will call up the original image, and the program will prompt users if the necessary volume is off-line.

Kudo will display multiple thumbnails in a slide show-like progression. Another feature will let users drag a thumbnail into an Aldus PageMaker or QuarkXPress document. Users will be able to position the thumbnail on the page, and it will maintain links to the original file as if the image had been acquired by the page-layout program.

Users will be able to print all images from within Kudo in either full or thumbnail size.

Kudo will stake out the same territory as Aldus Fetch, Multi-Ad Search (see story below) and several other programs. At the expo, Delta-Point Inc. also premiered Freeze-Frame, an \$89 graphics database due to ship in the first half of the year (see MacWEEK, Jan. 4).

Impace Systems Corp. is at 4747 Morena Blvd., Suite 360, San Diego, Calif. 92117. Phone (619) 272-2600; fax (619) 272-4292. □



Kudo Image Browser catalogs display up to 32,000 multimedia files as thumbnails that can include user comments. Users can search these notes.

Multi-Ad promotes Creator with System 7 features

By Carolyn Said

San Francisco — Multi-Ad Services Inc. last week rolled out new versions of its ad-design and cataloging programs at Macworld Expo here.

► **Multi-Ad Creator 3.5**, available now for \$995, features improved graphics handling and color capabilities.

The ad-design and layout program now offers support for Apple events and subscribe. Via Apple events, Linotype-Hell Co.'s LinoPress editorial system can send Creator information describing ad size, colors and fonts; the ad can be produced in Creator and sent back to LinoPress for pagination and billing calculations.

The program now offers editing of automasks and six new gradient color fills. Users can position on-screen objects within 0.125 point.

"Being able to edit automasks is really helpful," said Bob Lama, media manager at Thrifty Stores Inc., a supermarket chain based in Burlington, Wash. "We frequently place logos over artwork," he said. "This solves our problems with artwork showing through."

Creator 3.5 reads PostScript Printer Description files, so users of PostScript-compatible output devices can adjust printer-specific features to improve color separations.

Upgrades are \$149 plus \$5 shipping, or \$50 plus \$5 shipping to users

who bought 3.0 after June 6, 1992.

► **Multi-Ad Search 2.0**, due in March for \$249, puts a redesigned interface on the cataloging program. New features let users open and search multiple catalogs and print text lists and catalogs. Search 2.0 catalogs can contain up to 160,000 records, surpassing the previous version's limit of 32,000 files. The upgrade also speeds search times and adds support for QuickTime movies.

Upgrades will be free except for shipping charges.

Multi-Ad Services Inc. is at 1720 W. Detweiller Drive, Peoria, Ill. 61615-1695. Phone (309) 692-1530 or (800) 447-1950; fax (309) 692-6566. □

Quark

From Page 34

ting, and display and edit articles exactly as they will appear in XPress pages. A query feature lets users search the Dispatch database for articles by name, subject, author or other criteria.

► **QuarkDispatch XTension**, an add-on software module, adds a Dispatch menu to the standard XPress program. The menu lets users perform searches and check XPress layouts, CopyDesk articles,

and other page elements in and out of the system.

► **Third-party solutions** can be linked to QPS via XTensions or QuarkConnect, a forthcoming application that will provide an interface for other applications to communicate with the Dispatch server. Pricing of QuarkConnect has not been set. Quark said one of these two approaches will be used to link graphics with QPS; currently, the system does not track artwork. Other software, such as wire-service capture

programs, also could be integrated into QPS.

QPS pricing depends on configuration but begins at \$20,000 for a 10-user setup, including Dispatch, CopyDesk and the Dispatch XTension, but not XPress.

Quark, which shipped a Windows version of XPress last month, said it also plans to release QPS for Windows at an undetermined date.

Quark Inc. is at 1800 Grant St., Denver, Colo. 80203. Phone (303) 894-8888; fax (303) 894-3399. □

Seiko launches latest dye sub: Pro ColorPoint PSH built for speed

By Matthew Rothenberg

San Jose, Calif. — Seiko Instruments USA Inc. last week added a speedy dye-sublimation printer to its color palette.

The Professional ColorPoint PSH, which debuted at San Francisco's Macworld Expo, is scheduled to ship next month for \$9,999. The continuous-tone, 300-dpi printer will output three- or four-color images measuring up to 8.53 by 11.93 inches. The 24-bit printer will include a PostScript-compatible interpreter; 16 Mbytes of RAM, expandable to 64 Mbytes; and 39 Type 1 fonts. It will come with a 50-sheet tray that handles letter-, legal or B4-size paper or transparencies.

The printer is based on a proprietary engine and comes with a 25-MHz Weitek XL8220 RISC chip. It will process and output four-color images at four minutes per page, Seiko said. It will feature a multi-tasking architecture that can parallel process several print jobs, as well as an off-line printing option that can output multiple copies of a rasterized page quickly. The device will ship with flash ROMs that simplify firmware upgrades.

It will offer simultaneously active LocalTalk, RS-232C serial and Centronics parallel ports; users can turn automatic switching off to devote the

printer's RAM to a single port. The PSH also will include a SCSI interface for a hard disk. Seiko said it is preparing an optional \$1,500 interface adapter for TCP/IP Ethernet and Novell networks.

The PSH will come with software algorithms that sharpen lines and provide lossless compression of a three-color legal-size image in its standard RAM configuration.

Seiko also announced it has cut the price of its Personal ColorPoint PSE to \$2,999 from \$3,999. The 300-dpi thermal-wax printer features a maximum image size of 8.53 by 11.93 inches and prints to letter-, legal- or B4-size pages at a rate of about one minute, 47 seconds per page.

The PSE includes Level 1 and HP-GL emulations; although it ships standard with 17 Type 1 fonts, for a limited time Seiko is bundling 39 typefaces with the printer. PostScript Level 2 compatibility will be available for \$599 in the second quarter.

It includes a 16-MHz Intel 89060 RISC chip; 5 Mbytes of RAM, which can be expanded to 21 Mbytes; and simultaneously active LocalTalk, serial and parallel interfaces.

Seiko Instruments USA Inc. is at 1130 Ringwood Court, San Jose, Calif. 95131. Phone (408) 922-5800; fax (408) 922-5840. □

Color panels put video in motion

By Nathalie Welch

San Francisco — Two vendors recently presented Mac users with a choice of active-matrix color LCD projection panels capable of full-motion video.

Both Sharp Electronics Corp. and nView Corp. have announced 640-by-480-pixel thin-film transistor devices.

► **Sharp Electronics Corp.'s** QA-1650, due to ship next month for \$6,495, is a 10.4-inch LCD that will display 24-bit color at a contrast ratio of 60-to-1. It will feature built-in composite and S-video inputs and works with NTSC, PAL (European) and SECAM (French) video signals.

Sharp's optional \$895 QA-BL1 backlight unit will turn the LCD projection panel into a flat-screen direct-view computer monitor.

► **nView's ViewFrame Spectra C**, available now for \$4,495, is an 8.4-inch panel capable of displaying 185,193 colors at a contrast ratio of 100-to-1.

With nView's external Video

Adapter, priced separately at \$595, the panel can display full-motion video from a variety of sources. The adapter decodes composite video signals from VCRs and camcorders and works with NTSC or PAL video signals. It also includes RCA composite video cables to connect video sources to the adapter.

The Sharp and nView panels weigh 6.7 pounds each, ship with a wireless remote control for image adjustments and can project video at 30 frames per second. Both are compatible with IBM PCs and compatibles as well as Macs with on-board video. Other Mac models require an interface adapter to use the panel. nView offers an interface adapter for \$149.

nView Corp. is at 860 Omni Blvd., Newport News, Va. 23606. Phone (804) 873-1354; fax (804) 873-2153.

Sharp Electronics Corp. is at Sharp Plaza, Mahwah, N.J. 07430-2135. Phone (201) 529-8731; fax (201) 529-9636. □

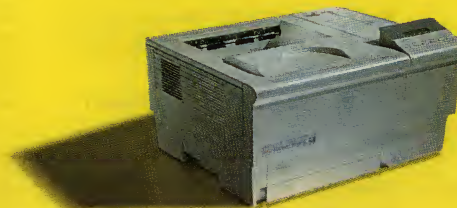


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News Analysis

Service bureaus find niches for dye-sublimation printers

Spectacular printers come down in price

By Steve Hannaford

Of all the desktop printing processes the Mac has brought into common use in the past few years, perhaps the most spectacular has been the advent of dye-sublimation printers. To eyes used to thermal-transfer and ordinary inkjet printing, dye sublimation has a candied gloss like a high-quality photograph that far surpasses ordinary color printing.

Unlike printing processes that rely on dithering or halftone dot placement to create color effects, dye-sublimation technology works by overlaying 256 distinct levels of color dye (see MacWEEK's Printers Special Report, Sept. 21, 1992).

Until recently, the cost of dye-sublimation output limited these devices to service bureaus and other color-output vendors. Early dye-sublimation printers cost more than \$70,000, and the special coated paper required starts at \$4 to \$6 per page. However, unit prices have come down to less than \$10,000, and smart service-bureau operators and other graphic arts professionals have found the specific niches that dye-sublimation printers can serve.

A short history. The first dye-sublimation printers, developed and packaged by Mitsubishi Electronics America Inc. and Eastman Kodak Co., were designed to proof digital photographic images relatively inexpensively.

Du Pont Printing and Publishing came on the market four years ago with its 4CAST printers, which cost more than \$70,000 and included the first Adobe Systems Inc. software RIP (raster image processor) that ran on the Mac. Service bureaus charged \$40 to \$50 per page or more for output.

Du Pont has lowered the price on its 4CAST in stages; it is now available for about \$15,000.

In the past year, several dye-sublimation vendors have jumped on board with low-cost models, most notably in the Mac market (see chart).

A new type of dye-sublimation printer geared toward service bureaus that want to provide inexpensive color proofs is emerging.

Sometime this quarter, SuperMac Technology is expected to release its large-format dye-sublimation machine. With a new, high-speed PostScript Level 2 software RIP from Adobe and color-management software from Electronics For Imaging Inc., it should compete with the 3M Rainbow Color Proofing System as a dye-sublimation color-proofing device.

Who uses them? Bob Schafel, industry pundit, president of the Professional Prepress Association and an early 4CAST operator, said that the striking appearance of the process won't early interest: "The images are pseudo-photographic; you don't have to look at halftone dots, but you can see rich, full color. For presentations to clients, this was a real winner, especially when we added PostScript type."

Dye sublimation's fine detail and accurate color differentiation have given it a role in map creation and satellite imaging. According to Lee Miller, president of Micro Images Inc. of Lincoln, Neb., dye-sublimation printers are superior to other desktop color printers for map making.

"Other printers, with their halftones or dithered dots, have severe limitations in terms of creating complex thin lines with distinct colors needed in printing maps," he said. Miller said dye-sublimation printers are matched only by film recorders for color detail. "You can't compare the nominal 300-dpi output of other printers to that of the dye-sublimation machine; in many ways [dye sublimation] holds color detail equivalent to 1,200 dpi."

Customer comps are another big market, especially in packaging. According to Joe Metzger at Metzgers PrePress of Toledo, Ohio, "Seventy-five percent of the business we get off the 3M Rainbow is in packaging comps." Dye sublimation lets packaging operators quickly create alternatives to a basic package design and present the customer with a print that imitates the appearance of a varnished package.

Presentations is also a growing market for dye sublimation. Most dye-sublimation models print to acetate, which allows users to create large photographic transparencies, a unique offering in the competitive

overhead transparency market.

With the emergence of digital cameras and Kodak's Photo CD, dye-sublimation printers are being used widely for digital photo output. Several vendors, including Kodak, Seiko Instruments USA Inc. and Sony Corp. of America, market their dye-sublimation printers specifically as digital photo output devices.

Problems. Output speed, especially of PostScript files, has been a big concern with dye-sublimation printers. Software RIPs have been very slow, and complex jobs on both the 4CAST and Rainbow can take more than an hour. New software from 3M and SuperMac, scheduled for release this year, promises much faster throughput.

On the other hand, according to consultant and systems integrator Ray Leach of Publishing Solutions Inc. of Akron, Ohio, dye-sublimation devices are easier to maintain than speedier Iris inkjet printers and color copiers.

"The dye subs are toasters," he said. "The daily maintenance is simple and requires little expertise." Low maintenance means consistent results without having constant operator interference or frequent service calls, Leach said.

Another important concern for dye-sublimation printer users is a consistent system for color matching. Without matched color, results from any color printer can vary widely and, in many cases, be unusable.

Among the color-matching options available for dye-sublimation printers are EFI's EfiColor system; Kodak's Precision Color Management System; ColorSense, Tektronix Inc.'s proprietary TekColor system; and 3M's proprietary system for its Rainbow.

EFI currently offers profiles for SuperMac's ProofPositive and Kodak's XL 7700 printers. It plans to release profiles for more dye-

sublimation devices, including Tektronix's Phaser IISD, GCC Technologies Inc.'s ColorTone and Seiko's ColorPoint, early this year.

More than a pretty picture.

Several dye-sublimation printer vendors, including 3M, SuperMac and Tektronix, are marketing dye-sublimation machines as color-proofing devices, a claim many printing veterans regard with some skepticism. "This technology might work for intermediate proofs," said Kevin Nathanson, pre-press manager at W.E. Andrews, a Bedford, Mass., commercial printer, "but we really need halftone-based output like a [3M] Matchprint for our final proof. That's what our commercial customers are comfortable with."

On the other hand, a number of users said these machines are carving out a new category, alternately called "pre-proofs," "internal proofs" or "good-enough proofs."

The 3M Rainbow's color-matching technology currently puts it at the front of the dye-sublimation pack in terms of color proofing, according to Jerry Mueller, president of The Composing Room, a St. Louis service bureau. "The blues [on the 3M Rainbow] are great, the browns are very good, and the flesh tones are excellent." Most important, Mueller said, "the colors seem to be very consistent from day to day."

The Rainbow's color match is not perfect, however. Mueller said that pastel shades tended to "feather out." For darker and more-saturated colors, however, dye-sublimation out-

put can surpass more-expensive Matchprints, Mueller said.

A growing number of sites are willing to bypass film proofs altogether for some projects. According to Walter Schild, director of technology at Alan Lithograph of Inglewood, Calif., a major printing shop with a growing PostScript pre-press department: "We regularly proof to the 3M Rainbow and do not go to Matchprint in six of our regular web publications. Our clients and pressmen are extremely pleased with the results." In fact, he said, his company recently ordered a second Rainbow.

Where are they headed?

The biggest growth area for dye-sublimation printers may be in proofing. Mills Davis, consultant and head of Davis Inc. of Washington, D.C., called the desktop color-proofing trend started by the Rainbow "one of the most exciting developments of 1992. With the growing acceptance of digital proofing, 3M has come up with an affordable, ecological technology that is slowly making inroads into film proofs." Davis said he sees SuperMac's machine as a likely competitor. Competition also should increase as EFI releases more EfiColor profiles for dye-sublimation devices.

It is ironic that printers that at first seemed destined for decorative eye-catching output may well become widespread, using color management, for doing the mundane but extremely important work of supplying inexpensive page proofs for an expanding and demanding color industry. □

Dye-sublimation printers at a glance

COMPANY	PRINTER	MAX. PRINT AREA (INCHES)	DPI	PRICE
Du Pont Printing and Publishing	4CAST	11.9x17.3	300	\$15,000 *
Eastman Kodak Co.	XLT 7720	10.08x10.08	203	\$24,995
Eastman Kodak Co.	XL 7700	10.08x10.08	203	\$19,995
GCC Technologies Inc.	ColorTone	8.1x11	300	\$10,999 *
JVC Information Products Co. of America	SP2200	10.22x13.62	300	\$24,995 *
Mitsubishi Electronics America Inc.	S6600-30U	11x17	300	\$19,995
Mitsubishi Electronics America Inc.	S3600-30U	8.5x12.3	300	\$8,995
Mitsubishi International Corp.	Shinko ColorStream/DS	8.5x12.3	300	\$11,900 *
Nikon Inc.	CP 3000	5x6.3	203	\$6,995
Seiko Instruments USA Inc.	Professional ColorPoint PSH	8.53x11.93	300	\$9,999 *
Sharp Electronics Corp.	JX-7000	8.1x11	300	\$7,500
Sony Corp. of America	UP-D7000	7.9x9.1	163	\$8,995
SuperMac Technology	ProofPositive Full-Page	8.21x9.31	300	\$9,999 *
SuperMac Technology	ProofPositive Two-Page	11x17	300	\$19,499 *
RasterOps Corp.	CorrectPrint 300	8.1x11	300	\$8,999 *
Tektronix Inc.	Phaser IISD	8.1x11	300	\$9,995 *
3M	Rainbow Color Proofing System	11.8x17.2	300	\$19,500 *

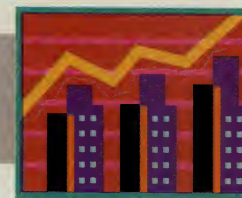
*Price includes PostScript.

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Macromedia rolls with the changes

But pressure to go public still remains

By Jon Swartz

San Francisco — While executives have come and gone at Macromedia Inc. since the early 1990s, one thing remains constant at the multimedia company: pressure to go public.

That pressure has resulted in two major mergers and four management changes, including the appointment of John C. "Bud" Colligan, chief operating officer, to succeed Tim Mott, president and CEO. Mott, who turned over CEO duties Jan. 1 so he could spend more time with his family, will remain chairman and act as a technical and financial adviser.



Tim Mott (left) and John C. "Bud" Colligan are credited with turning around Macromedia.

But while some industry observers contend Macromedia's management has been in a state of transition since it acquired Paracomp Inc. in 1991 and Authorware Inc. last year, it now appears Macromedia has righted itself. The company has recorded two straight profitable quarters, corporate sales are booming and the multimedia industry is flourishing after years of unfulfilled promise.

That wasn't the case just a year ago when the company was losing money. "They spent so much time on business plans and a [potential] IPO that it got in the way of product development," said David Baron, associate editor at Seybold Seminars & Publications in Malibu, Calif.

Others claim the company lacked

its once creative fire and was struggling under the weight of too many products and competitors. "It is very difficult for a \$30 million company to support 20 products," said John Latta, president of 4th Wave Inc., a multimedia production and systems company in Alexandria, Va.

But after several key moves by Colligan and Mott, co-founder of Electronic Arts Inc. and a veteran of Xerox PARC (Palo Alto Research Center) who joined then-MacroMind Inc. in 1990, the 135-person company appears back on track. The two are credited with:

► Focusing on key products in several market segments: Director and Authorware Professional in authoring, Action! in presentations,

See Macromedia, Page 45

RasterOps expects 2nd-quarter loss

By Jon Swartz

Santa Clara, Calif. — RasterOps Corp. last week became the second major Mac monitor maker to reveal that disappointing sales will cause it to post an operating loss for the current quarter.

RasterOps said it now expects net revenues of \$25 million for its second fiscal 1993 quarter ended Dec. 31, about the same amount as the previous quarter.

The company, based here, blamed the loss on its recent decision to overhaul its sales channel and replace 17 manufacturers' representatives with a 24-person sales force to sell its products directly to dealers.

"We think it's the right strategy for the long term, but the transition created a short-term loss," said Suzanne Crocker, RasterOps vice president of marketing and communications.

She said the company expects to be profitable in the third quarter.

Last month Radius Inc., citing product delays, said it anticipates an operating loss for the current quarter.

The announcement marked the second straight quarter the San Jose, Calif.-based display and accelerator maker has revised in midquarter its financial projections (see MacWEEK, Jan. 4). □

Zenith loses federal contract

By Jon Swartz

Washington — A government agency last week stripped Zenith Data Systems Inc., the U.S. computer maker owned by France's Groupe Bull, of a \$740 million contract to supply personal computers to the U.S. Air Force, putting Apple back in the running for the contract.

The General Services Administration made the ruling in response to an appeal by several manufacturers, including Apple, that had unsuccessfully bid on the Desktop IV contract, according to a Groupe Bull spokesman.

In a 53-page decision, the GSA said Zenith failed to meet all of the contract's conditions and encouraged the Air Force to award the contract instead to multiple vendors.

Sources said the Air Force is likely to either award the contract, as is, to a bidder other than Zenith or

revise the contract and restart the bidding process.

The contract calls for the winner to provide as many as 300,000 desktop computers over a three-year period.

Mike Martucci, Apple Federal Systems marketing manager, said the computer maker is actively pursuing the contract and is "still extremely interested."

Industry observers said the appeal included assertions of improper evaluation of production and technical costs.

The appeal by the losing companies was led by CompuAdd Corp. of Austin, Texas, one of two companies that earlier won the bid.

The award to CompuAdd was appealed by Zenith and others on the grounds that they were given no chance to fine-tune their bids before the award was made (see MacWEEK, Sept. 21, 1992). □

Active-matrix display tariff to be reconsidered by agency

By Lisa Picarille

Washington — A federal court's decision last month asked a government agency to reconsider hefty tariffs on imported active-matrix displays.

Seen by industry observers as an interim victory for U.S. laptop makers, the court's decision said a controversial September 1991 ruling by the International Trade Commission imposing tariffs of up to 62.7 percent on imported flat-panel displays was based on a "misreading" of the law.

That ITC ruling came under heavy pressure from U.S. screen makers, who claimed Japanese companies were dumping the displays in the United States at unfairly low prices.

The ITC and the U.S. Department of Commerce are expected to make additional rulings on the

tariff, which is still in effect.

The tariff has been vehemently opposed by U.S. computer makers, several of which have moved production of models with active-matrix displays overseas to avoid the tariff since screens built into assembled laptop and notebook systems are not subject to the duty. Apple, for example, builds its PowerBook 180 model offshore.

U.S. computer makers also argued that domestic screen manufacturers have yet to produce a commercially viable active-matrix display.

To date, only OIS Optical Imaging Systems Inc. of Troy, Mich., makes high-end screens.

However, in November OIS did an about-face and asked the U.S. Department of Commerce to cancel the tariff (see MacWEEK, Nov. 23, 1992). □

StockWatch

01.06.92 CLOSE WEEKLY % CHANGE

Apple 61.75 5.11

SOFTWARE DEVELOPERS

Adobe 33.50 6.35

Aldus 15.38 9.82

Caere 19.50 11.43

CE Software 4.06 0.00

Microsoft 89.00 3.64

Novell 30.38 5.19

Symantec 13.13 -3.67

PERIPHERALS VENDORS

CMS 3.13 19.05

HP 72.75 4.11

Mass Micro 0.53 -15.04

QMS 13.25 0.00

Radius 5.13 13.89

RasterOps 7.63 -4.69

Sigma 7.13 7.55

SuperMac 17.00 -2.86

STORAGE

Conner 22.88 10.91

Maxtor 15.13 10.00

Quantum 16.63 9.92

Seagate 21.25 11.11

SyQuest 24.75 -2.46

INDUSTRY INDICATORS

DEC 35.88 7.09

IBM 48.00 -4.24

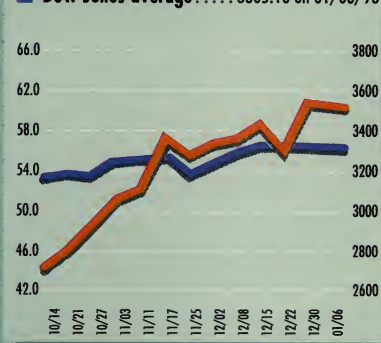
Motorola 108.25 2.85

Sun 37.00 10.04

Dow Jones 3305.16 -0.48

Compiled by Nordby International Inc.

Apple stock price 61.75 on 01/06/93
Dow Jones average 3305.16 on 01/06/93



Radius climbs despite loss announcement



Despite an announcement last month that it expects to post an operating loss for the current quarter, Radius Inc. fared well on Wall Street.

The San Jose, Calif.-based display

and accelerator maker, which has experienced weaker-than-anticipated sales for the past two quarters, saw its stock price increase 14 percent to close at \$5.13 last week.

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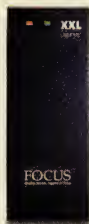
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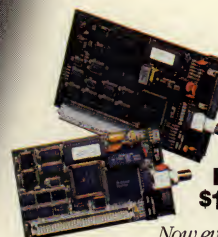
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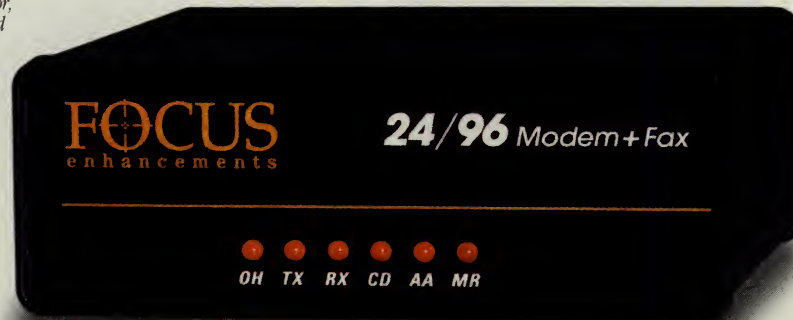
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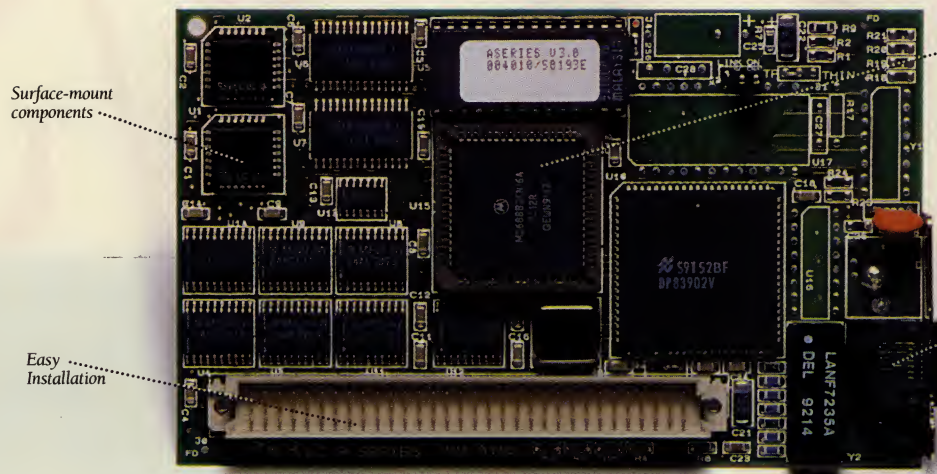
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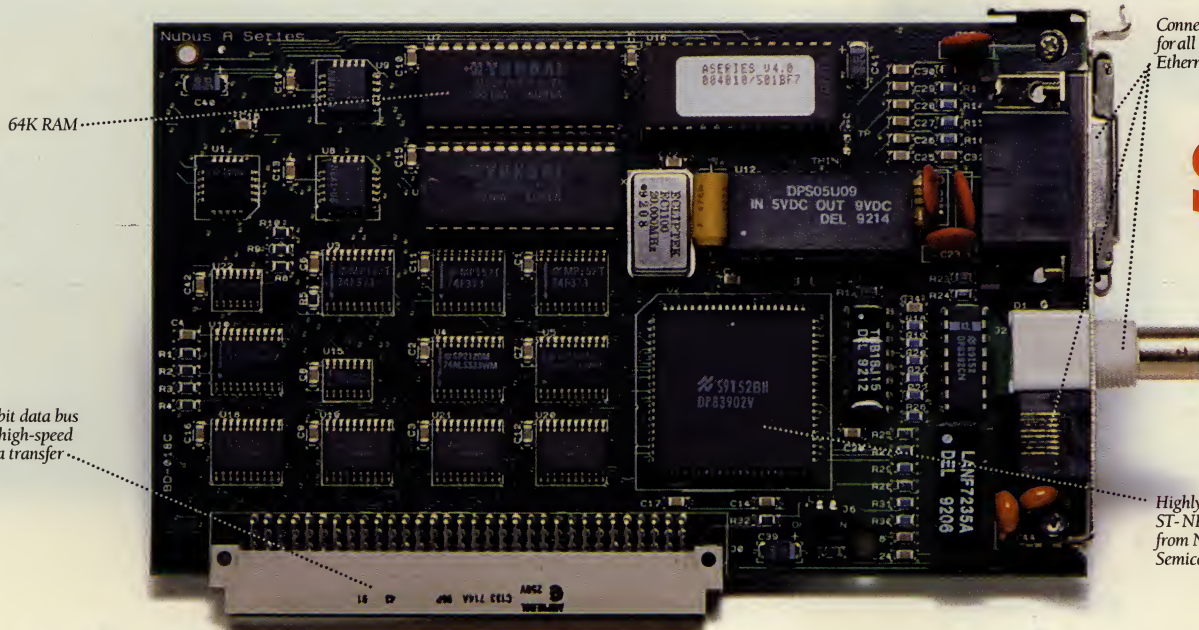


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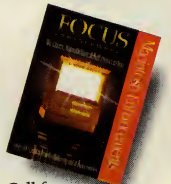
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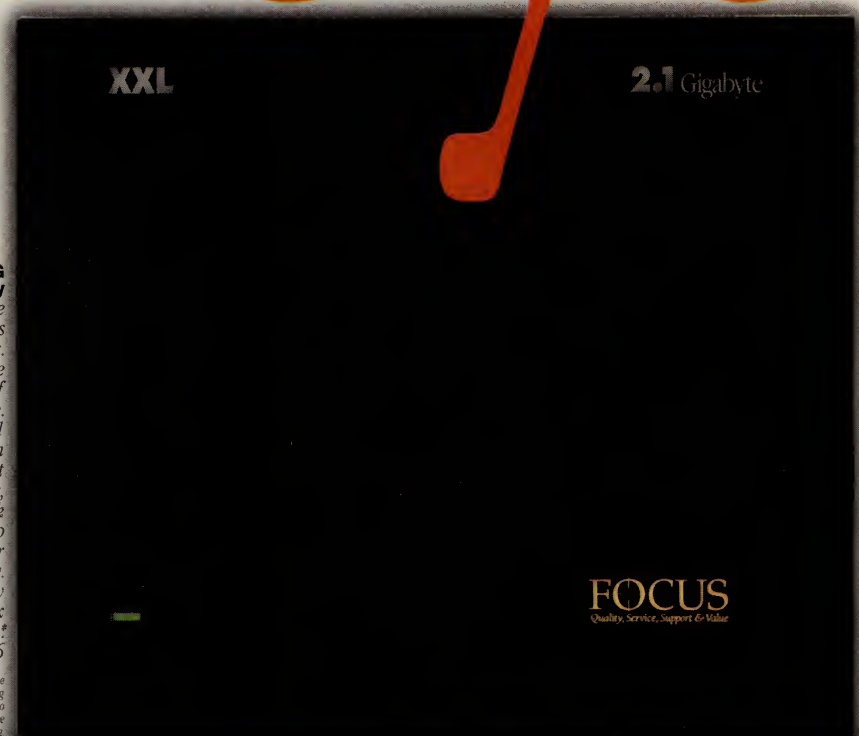


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Shapero tapped to improve Bimillennium

Numbers crunching needed right now

By Jon Swartz

Los Gatos, Calif. — Struggling Bimillennium Corp. has recruited a well-known Mac networking executive to help the company reverse its misfortunes.

Rich Shapero, the former Shiva Corp. and Sitka Corp. executive and acting CEO of No Hands Software, has joined the 2-year-old developer of numerical-analysis programs as a

"company resource" to guide it to profitability.

By Shapero's own admission, he has his work cut out. Bimillennium, which spent more than \$13 million before introducing a product, last month filed for prepackaged Chapter 11 protection in a last-ditch attempt to erase a \$600,000 deficit. The company is down to 12 workers after employing 60 people a year ago.

And competitors, aware of the financial hemorrhaging, have made several bids to acquire the company.

But Shapero said the company's investors are convinced its Hi-Q

numerical-analysis program and other technologies will succeed "with the proper management in place."

Shapero and acting CEO Howard Sidorsky are beefing up the company's engineering division while searching for a permanent CEO and senior marketing executive. Both men denied they are candidates for CEO.

In fact, Sidorsky is scheduled to leave the company early this year. Shapero said he will serve on Bimillennium's board once a CEO is found. □

Macromedia

From Page 40

MacroModel and Three-D in 3-D modeling, and MacRecorder Sound System Pro in sound. In the process, the company is phasing out redundant products such as Magic and FilmMaker. "They want to be considered the multimedia one-stop shop," Baron said.

► Emphasizing powerful programs that are interoperable with System 7, QuickTime and Windows. The company has signed technology-sharing and OEM deals with Apple, Microsoft Corp. and Kaleida

Labs Inc. that promise to deliver Director, Authorware Professional and Action! on Apple's QuickTime for Windows, Microsoft Video for Windows and Kaleida's ScriptX — all by early this year.

► Improving corporate sales to 60 percent of the company's total revenues through agreements with American Airlines Inc., Hughes Aircraft Corp. and Boeing Co., according to Joe Fantuzzi, Macromedia vice president of marketing.

The formula apparently was a winning one. Macromedia, with annual revenues of \$30 million, is

perhaps the largest multimedia company. In fact, it has been profitable the past two quarters, rekindling speculation that an initial public offering is imminent. Colligan admits that board members in recent weeks have made "aggressive overtures" for the company to go public this year.

"There is a very performance-oriented culture here," Colligan said. "But none of our investors would force us to go public unless we're comfortable and ready."

Their timing couldn't be better, analysts say. The multimedia industry is undergoing a revival of sorts as technology advances make it easier to use. Apple, Microsoft, IBM Corp. and Intel Corp. continue to promote multimedia as the next frontier in personal computers. Meanwhile, market researchers such as Decision Resources Inc. of Burlington, Mass., forecast a \$3.73 billion market for multimedia products and services by 1995, up 70 percent from \$2.2 billion this year.

Things certainly have changed at Macromedia since Marc Canter, the artist-opera singer-sculptor-computer programmer co-founded MacroMind in 1984 with artist and musician friends as a "software rock 'n' roll band."

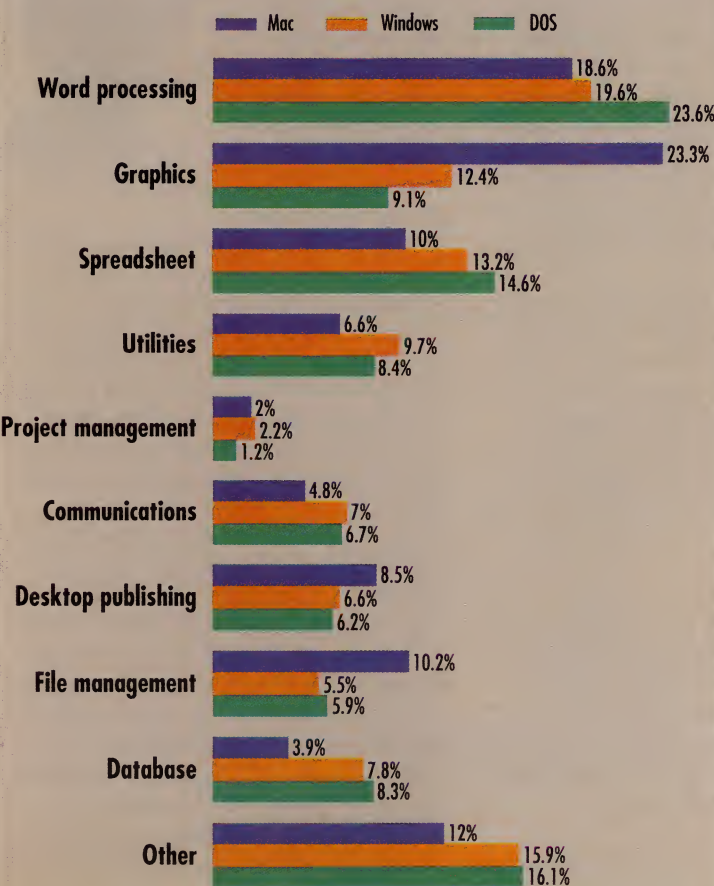
A sober pragmatism has replaced Canter's mercurial mindset that preached the concept of multimedia for everyone, without focusing on particular market segments or specific kinds of professionals. Canter remains the company's largest shareholder.

Colligan concedes major challenges remain — among them, building a strong presence in the Windows and publishing markets. But his main concern today is to get the most out of the company's top products.

"We want to turn each of our top 10 products into a \$10 million line, not just \$2 million to \$3 million," he said. "We think we have a \$100 million company." □

Applications in use

Productivity programs, as expected, were the most commonly used applications among U.S. computer users, based on percentage figures released by InfoCorp.



Source: InfoCorp.

Business

BRIEFS



Tektronix's good and bad news

Wilsonville, Ore. — Tektronix Inc. had good news and bad news for its shareholders last month.

The good news was the peripherals company reported improved orders, sales and earnings for its second quarter ended Nov. 28. Earnings were \$8.4 million on sales of \$333.5 million, compared with earnings of \$8.1 million on sales of \$303.2 million in the same quarter a year ago. Customer orders, meanwhile, rose 13 percent, from \$299 million to \$339 million.

However, the company's solid quarter was tempered by an Ohio federal district court jury's verdict against Tektronix in a patent case involving its Pi-cell liquid-crystal display products.

The jury awarded nearly \$5 million in damages, including interest, to James Ferguson and Todd Morgenthaler, who have worked on liquid-crystal display technology. The court could increase damages to \$15 million based on Tektronix's willfulness, said Tom Shunk, the Cleveland-based attorney for the defendants.

R. Allan Leedy, Tektronix vice president, secretary and general counsel, said the company will appeal the decision.

Oracle posts strong second-quarter earnings

Redwood City, Calif. — Oracle Corp.'s second-quarter earnings skyrocketed 147 percent last month, surprising analysts and investors, who pushed the company's stock sharply up in over-the-counter trading.

More than 8.6 million shares changed hands in NASDAQ trading, driving the database software maker's stock up \$8, to \$27 per share. Last week the stock closed at \$29.38.

Analysts had expected the company, based here, to earn between 13 cents and 16 cents per share on sales of about \$337 million for the quarter ended Nov. 30. Actual sales were \$353 million.

Quarterly earnings jumped to \$33 million, or 23 cents per share, from \$14 million, or 10 cents per share, in the same quarter a year ago.

3Com has record sales, acquires token-ring vendor

Santa Clara, Calif. — 3Com Corp., riding a wave of Ethernet adapter and networking hub sales, last month announced record second-quarter orders and sales.

The company, based here, said orders rose 60 percent, to \$153.8 million, while sales were up 51 percent, to \$147.3 million, for the quarter ended Nov. 30.

Earnings were \$7.8 million, an increase of 185 percent from \$2.7 million in the same quarter last year.

3Com also said it has purchased Star-Tek Inc., a Northboro, Mass.-based token-ring developer, for \$48.5 million in 3Com stock.

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EDITORIAL

A coup for Microsoft

The steward in charge of Apple's crown jewels has defected to the rival kingdom to the north. Presumably the treasure chest remains intact; the king and remaining ministers will order the locks changed, and the prime minister will hold the keys temporarily until investing some new seneschal with the responsibility.

But the other kingdom, which has grown into a vast empire and accumulated fabulous riches since figuring out that windows and wizards can turn dross into gold, now has access to intimate information about every facet — including the scratches and defects — of the new gems Apple has been polishing up.

That's our reading of last week's news that Roger Heinen, Apple senior vice president and general manager of the Macintosh Software Architecture Division, left the company to join Microsoft Corp. Although Apple insiders give Heinen mixed reviews on his performance during three years at the company, the development is obviously a blow to Apple, one that is bound to be demoralizing and

disruptive. And even if legal agreements prevent him from disclosing details of his former lords' plans to his new ones, it's a coup for Gates & Co.

Heinen's move probably will have little effect on Apple's long-term direction. But we hope that Michael Spindler, who will take personal charge of the software division on an interim basis, will use the occasion to review and revise some of the group's policies and priorities. We support the company's decision to charge for system software, but as we have argued here before, some aspects of the new pricing plans are shortsighted and arbitrary. And we hope the group will refocus its energies on the issues most important to Apple's business base. We are all for cross-platform movies, but most Mac users, we think, have more urgent needs for cross-platform messaging.

If a new steward for system software brings changes in such areas, what seems at first like a stunning setback could prove a boon to the company and its customers. □

Commentary

Bundle could be the shortest path to Mac IS heaven

From the very beginning, Apple's relationship with the corporate world has been an uneasy one.

For years Apple has been trying to generate acceptance, revenues and profits in the mainstream of corporate information systems. The results have been mixed, at best.

Of course, many Macs have been sold to many happy corporate users. But despite incontrovertible evidence that the Mac is indeed easier to set up, operate and modify than any IBM PC or compatible, the reputation remains: The Mac isn't a mainstream IS machine.

Visual Basic. One of the key reasons Apple still fails to gain widespread acceptance in the corporate IS world is a lack of tools for fast and effective in-house development.

Microsoft Corp.'s Visual Basic has begun to acquire a following for development of custom applications. Visual Basic fulfills some of the promises of object-oriented programming, allowing in-house program-

mers to save valuable development time by taking advantage of reusable, modular code.

A third-party market has developed for what are called Controls in Visual Basic lingo. These .VBX files, if placed in the right directory, will appear as additional icons in the Controls palette when Visual Basic is launched. Double-click on an icon, and it jumps to the active form on the screen. Double-click on that, and the code sheet opens, allowing you to modify its built-in methods.

Nice, and a good opportunity for third-party developers to build finely tuned extensions that corporate users can later modify.

Database-oriented extensions are the most popular. And Microsoft itself bundles an Open Database Connectivity (ODBC) module for its SQL server with the latest Visual Basic release. ODBC modules for other popular database engines surely will follow.

4D reasons. This leaves Apple, and its corporate customers, in a strange situation. On the one hand, Apple appears sincerely committed to its IS partners. The Enterprise Systems Division, the focal point of the company's IS support efforts, hasn't yet presented an equivalent to Visual Basic for custom corporate applications.

But it could.

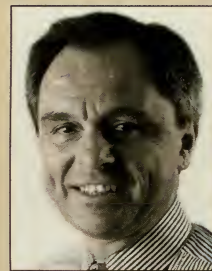
Most custom applications revolve around a database, a dedicated local one or a shared

corporate repository. For such applications, one product — ACI US Inc.'s 4th Dimension — has evolved into the Mac development tool of choice. Unlike Visual Basic, it does not have to be adapted to database applications and, in its latest release, it offers a complete set of client-server database tools.

At one time Apple owned the rights to what ultimately became 4th Dimension. Much to Apple CEO John Sculley's credit, after briefly contemplating ceding those rights to now-defunct Ashton-Tate Corp., he made the courageous decision to return 4D to its authors at ACI.

Such a good deed could be made to pay off handsomely, now that 4D has reached the stage where it would be a strong addition to ESD's arsenal. This is more than just another check mark on the list of things that IS managers are looking for from serious enterprise solutions. With 4D Server, Apple would be able to offer an integrated solution that far exceeds any other desktop relational database solution in ease of use and performance.

I'll watch the next Apple catalog and look for ACI along with Aldus Corp. and Claris Corp. □



JEAN-LOUIS GASSÉE

LETTERS



When a \$7.50 shipping fee becomes a \$3,750 license fee

It had been my understanding that Apple would include Adobe Type Manager with System 7.1. To my great disappointment, I found out that this was not so.

I was relieved, however, when the System 7.1 read-me file said that as "a gift from Adobe" I could get "a free copy of award-winning" ATM, and that all I would have to pay were the shipping and handling charges of \$7.50 to "take advantage of this incredible offer." That sounded fair enough, but then I called Adobe Systems Inc. Its customer representative said that I would have to pay the \$7.50 "shipping fee" for every CPU in the institution (we have more than 500).

I told the Adobe representative that wasn't a shipping fee, that it was a license charge. She replied, "Well, that's one way to look at it." Well, I am sorry, but that's not the way I look at it. Paying more than \$3,750 hardly seems like a gift to me. Either Apple or Adobe is lying to us. If Adobe or Apple respect their registered customers in the least, they will have to live up to their promises.

Raul M. Silva

Computer purchases coordinator
School of the Art Institute of Chicago

Online column: History or historical revisionism?

In his commentary (MacWEEK, Dec. 14, 1992), Jean-Louis Gassée gave MacWEEK readers his uninformed history and insipid motives behind the America Online Inc./Apple deal.

Here's my version:

First, a little background about me, a user. I limped into the computer age in January 1989 with the purchase of an Apple IIGS (remember that great graphics and sound machine?), an ImageWriter II printer, an Apple Personal Modem and software for AppleLink Personal Edition.

Gassée said, referring to America Online, "at one point this service was going to be called AppleLink Personal Edition." No, Jean-Louis, it really did exist under this name. In addition to the software, I have old copies of the monthly magazine AppleLink Update and a T-shirt bearing the "AppleLink Personal Edition" logo to prove it. Didn't this guy work for Apple in some minor capacity at that time?

Cripes! It was Apple and Quantum Computer Services (now America Online Inc.) of Vienna, Va., that ran the service. Then early in 1990, Quantum took over the entire operation of the service. It later changed the name to America Online and linked it to its similar services for IBM PCs and compatibles, and Commodores. Heck, Gassée gives Quantum absolutely no credit for the outstand-

ing job it has done growing America Online. Now, let's talk motives.

I disagree with Gassée's Newton theory. And America Online is already spending the big advertising bucks and giving its software away "free" to gain subscribers. Additional revenues are certainly a factor for Apple to want to get back into the action; however, I don't think it wants the inevitable headaches just to be an also-ran in the on-line services business.

Instead, I think Apple and America Online are aiming directly at CompuServe Information Service, that cumbersome and expensive on-line player that currently dominates the field. Consider that Apple and IBM Corp. are business partners. America Online lets Apple, Mac and PC users talk to each other, send electronic mail and share files in a very elegant, easy-to-use format. America Online now even offers free access to the Internet gateway. GEnie isn't a treat, Prodigy stinks, and there are no other players with the clout to do it.

I predict that America Online will bury CompuServe and become the dominant on-line service.

Dan Fauver, vice president, creative director,
Wyse Advertising, Cleveland

If upgrade loses files once, it also can lose them twice

Is it an ice cube in the North Atlantic, or the cousin of the iceberg that took down the Titanic? It seems like more than a coincidence when two people, one in Georgia, one in Minnesota, suffer catastrophic file losses after upgrading from System 7.0 to System 7.1.

Apple technical support has admitted that in "extremely" rare circumstance, if you had gone through the progression of 7.0, 7 Tune-Up, then 7.1 without using disk first aid between each step, you "might lose files."

In our case, that was 600 files.

Oh, and we back up to an external hard disk, and the bug trashed that file structure at the same time.

We believed the "extremely rare" part of the Apple story until this morning. We were talking to a sales rep from a company in Atlanta who told us that the exact same thing happened to her right after she upgraded to 7.1. She thought it was her fault. How many people are sitting out there thinking it's their fault?

We suspect that the original bug that caused the "disappearing folder" problem in 7.0, the problem that Tune-Up "fixed," comes back like a mad dog when you upgrade to 7.1.

George C. Lobmer Jr., Steve Dombroski,
Minnesota Medical Association, Minneapolis

Send letters to MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105. MCI 323-1203; fax (415) 243-3650. Include your name, address and phone number. Letters should not exceed 300 words. We reserve the right to edit for clarity and length.

The Mac Manager

Calling all managers: Think before you sync



DON CRABB

You just got into your hotel room. Your flight was late and you're tired. But you still have to go over the Jeffries proposal that you're set to make the next morning with your most important client.

So you wake up your PowerBook to put the final polish on the big presentation, but something is wrong. The proposal is missing several pages and a few key graphs are gone, as are your slides. You're steamed, and you don't know what happened.

Lack of file synchronization creamed you. The most recent proposal documents you left in your desktop Macintosh don't correspond to these earlier versions you've copied to your PowerBook. You forgot to keep your file versions current between your office Mac and your PowerBook.

And you're supposed to be the Mac guru. What happens to the on-the-road PowerBook users who don't have your experience?

Get in sync? Vendors will tell you that the answer is file-synchronization software (see comparison, Page 63). Of course, you could buy Duos and Duo Docks if you only had the budget to replace all those PowerBooks you bought last year.

But using file-synchronization software by itself won't solve the problem of maintaining file synchronicity. You have to add some clear thought and some good old-fashioned management planning to the mix.

Mac Management 101. If you think I'm kidding, consider the case of two of my clients. Both of these managers put PowerBooks into the hands of their sales staff in 1992; they now rely on carrying bits of their presentations, sales data and reports from

their servers on their PowerBooks.

Both managers immediately saw the need to make sure their people were carrying only the latest data with them.

The first client, whom I'll call Sally, decided to think about how her salespeople actually used their data and how often they would need to update it before she instituted a file-synchronization plan. She spent several weeks meeting with her sales reps to find out how they used their PowerBooks and how they downloaded the files they carried on the road.

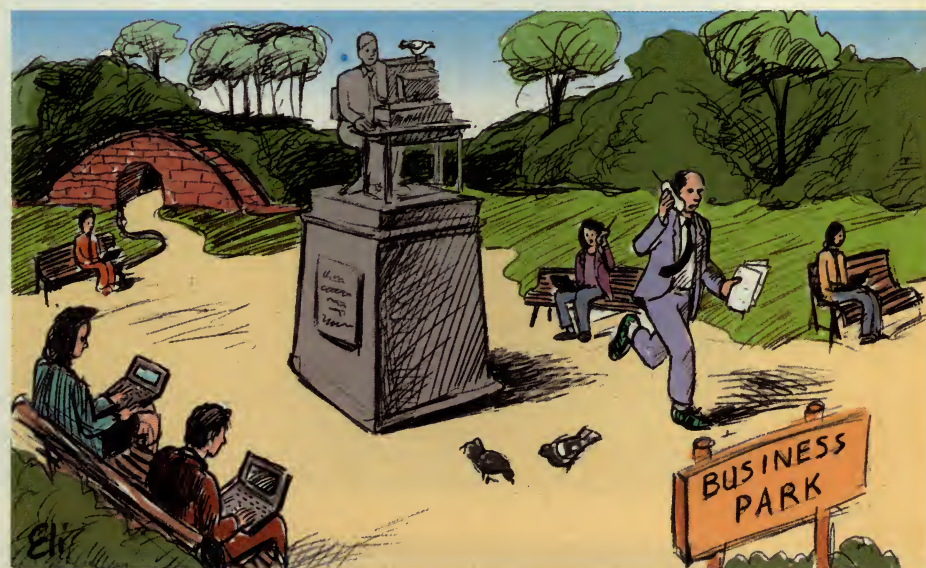
The second client, whom I'll call Harry, had just read a couple of file-synchronization software reviews and was hot to implement it. So he bought a package, set it up on the servers, created a read-me file and told his sales staff to use it.

A month later, Sally finally implemented her own update protocols that included AppleTalk Remote Access (ARA) servers, as well as file-synchronization software.

Who's happier? Harry's folks ran into problems of improperly duplicated files, empty files and bad file dates and have all but given up on keeping their files synchronized automatically. Harry's now rethinking his implementation.

Conversely, thanks to Sally's broader strategy of melding ARA servers with file-synchronization software, her people suffered very few of the problems that Harry's have.

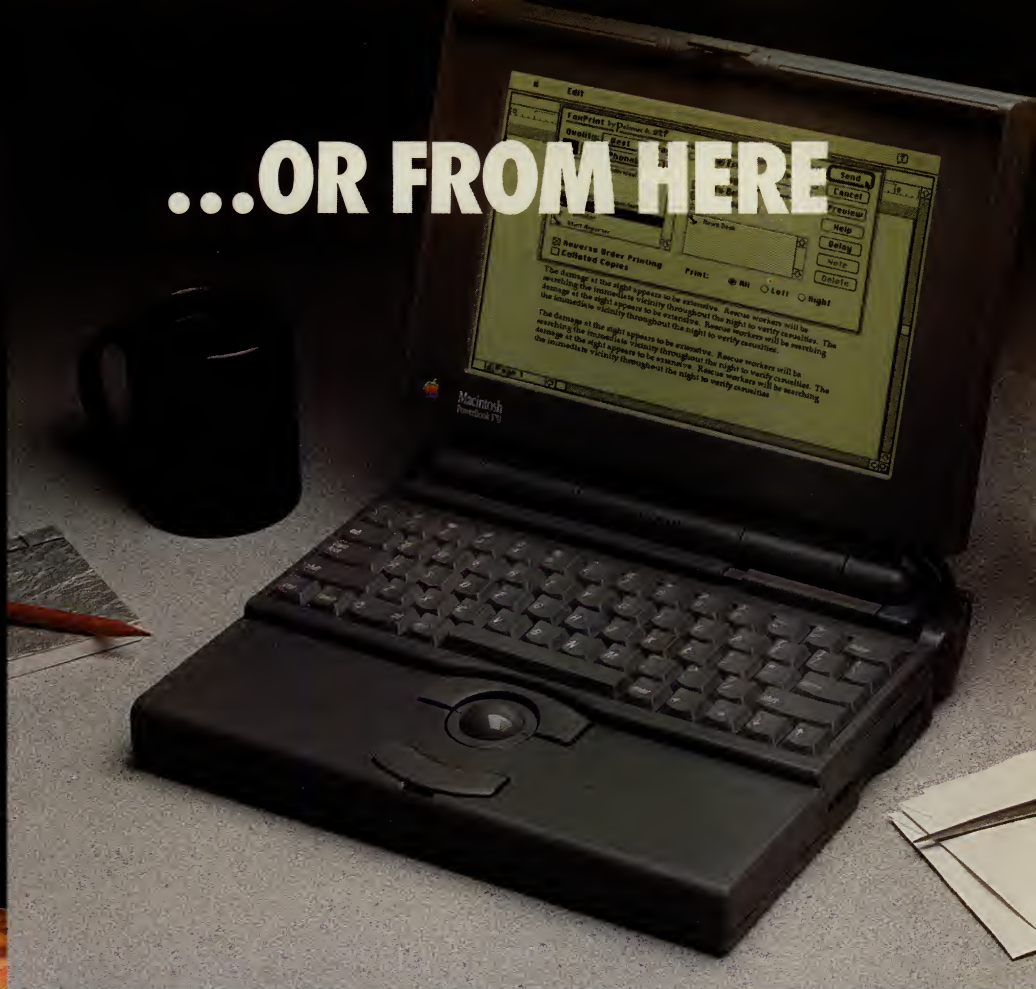
1993 promises to be a big year for Mac managers who want to remove as much drudgery from their lives as possible. Let's all be sure that in moving to a more automatic Mac world we don't forget that good managers evaluate and plan before implementing. Technology will never obviate that. □



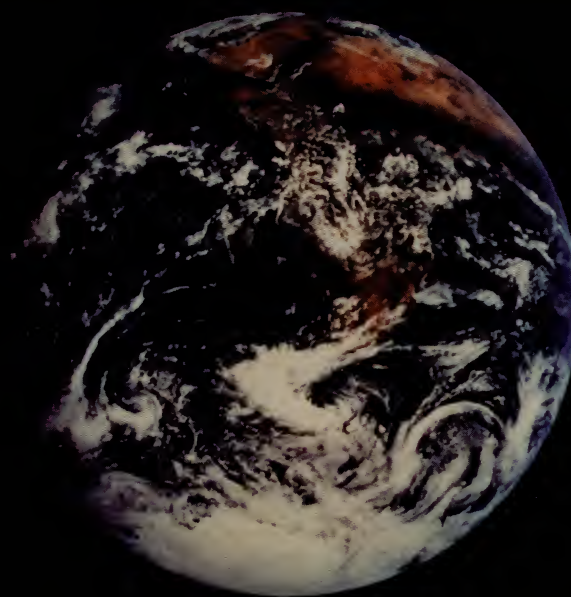
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MOBILE COMPUTING

Modular ARA Server from Global in July

By Andrew Gore

Mountain View, Calif. — Global Village Communication Inc., maker of the top-selling PowerPort internal modems for PowerBooks, will be getting on the other side of the wire with a family of modular AppleTalk Remote Access servers this summer.

The first ARA server, an Ethernet-equipped, two- to eight-port external box, will ship by July and cost less than \$750 per port, including a 14.4-Kbps internal modem for each port.

► **Flexibility.** The Global Village server reportedly will be the first ARA device that comes with bus slots instead of serial ports. The slots can accommodate any internal modem that works in a PowerBook and will include the PowerPort or a serial card to attach an external modem.

► **Performance.** When V.32bis PowerPort/Gold modems, which can transmit data at a base rate of 14.4 Kbps, are used on both sides of an ARA connection, sources said, the Global Village server can go into "overdrive" mode, giving it up to 30 percent greater performance than servers operating at 14.4 Kbps.

► **Security.** Global Village also may add support for RSA Data Security Inc.'s public key encryption to its server, sources said. Used in combination with a PowerPort that also supports RSA, a user account can be keyed to that user's PowerBook, ensuring that only that Mac can gain access to that user's account.

The Global Village server also will support other industry-standard security schemes, sources said.

► **Management.** Multiple servers will be able to connect to one another, allowing an unlimited number of lines to operate as a

single server. In addition, the server, which can be managed remotely from a Mac on the network or over an ARA connection, can utilize a single list of user and group accounts and privileges.

SNMP (Simple Network Management Protocol) management reportedly will be standard with the server, and it likely will support Point-to-Point Protocol as an option.

The device will use flash memory, allowing users to update and make changes to the server's firmware via software downloads. □

'Rapid turns' key to PowerBook plans

By Andrew Gore

Cupertino, Calif. — From color screens to PCMCIA slots, several PowerBook enhancements are in the works, and they'll be hitting the market at a dizzying clip this year.

Under a new strategy Apple officials call "rapid turns," the company will introduce new and upgraded versions of its hot-selling notebooks every three to six months. Designed to maintain the momentum that has made Apple a leader in the notebook field, the policy is intended to ensure that the company is always offering its customers the best possible prices, performance and features as technologies and markets change.

"Someone buying into a PowerBook needs to be assured they're getting the best possible product at that point in time," said Randy Battat, Apple vice president of portable computing. "We figure the best way to do that is to stay nimble and reduce the time it takes to build better versions of our products."

The strategy has two prongs: frequent upgrades to existing products and major new CPU designs about once a year.

Users got a preview of what "rapid turns" will mean last year, when Apple replaced

the PowerBook 140 with the faster 145. When it found that it could upgrade the machine's CPU from 16 MHz to 25 MHz without a price increase, the company's Portable Computing group designed, implemented and delivered the change in nine weeks.

Another example, Battat said, is the addition of video-out capabilities. "We didn't think that it was that important when we designed the original PowerBooks, but that didn't turn out to be true." Just



New PowerBooks will come fast and furious in '93, said Apple Vice President Randy Battat.

one year later, every PowerBook model (except the 145) can drive an external color screen. By contrast, it took two years to develop the Duo system and four years for the original Mac Portable.

According to Battat, Apple is now the leading maker of notebook computers in the United States and No. 2 worldwide. The company's sudden surge in the field caught competitors off-guard, Battat said, but they have studied the innovations that made the PowerBooks a runaway success and are now readying their own imitative designs.

The key to staying ahead, then, is to be a moving target: Innovate early, innovate often.

According to Battat, not all incremental upgrades will replace existing models, as the 145 and 180 did. For example, PowerBooks with color screens won't necessarily supersede gray-scale systems.

Other improvements to look for in the coming year, he said, include increased RAM, higher-capacity hard disks, faster modems and the addition of wireless communications. There even will be a 68040-based PowerBook sometime in the future.

In some cases, Apple will offer PowerBook owners an upgrade path as it introduces enhanced models — something it has not done with previous changes in the PowerBook line. Few customers actually take advantage of upgrade offers, Battat said; the point will be to reassure buyers that rapid turns don't equate to obsolescence without options.

The increased pace of change could, however, exacerbate one problem that has dogged Apple since the debut of the PowerBooks: keeping up with demand.

"Clearly, we have to implement rapid turns in a way that ensures that we have high volume available quickly," Battat said. "The challenges we're having filling demand now shows we haven't gotten it quite right yet."

He offered some hope, however, that faster updates won't mean longer delays: "Ultimately, I don't think rapid turns and availability are inherently incompatible," he said. "Apple is currently undertaking steps to address shortages; fixing this is our top priority." □

Asanté thinks small for new SCSI Ethernet

By Andrew Gore

San Jose, Calif. — Asanté Technologies Inc. this year plans to introduce two tiny Ethernet networking solutions designed especially for PowerBooks on the go.

► **MiniENSC.** According to sources, the company is developing a SCSI Ethernet adapter for the Macintosh PowerBook that measures 3 by 4 by 0.5 inches — a fraction of the size of its current external adapters. Code-named MiniENSC, the little adapter is expected to ship in March for less than \$500.

The MiniENSC reportedly was designed to allow PowerBook users to carry their Ethernet-connection hardware with them. The miniature adapter will have built-in connectors for 10BASE T and thin-net cabling; using an external transceiver, it can access thick-net Ethernet LANs as well.

► **Mac PCMCIA.** Further out on the horizon, Asanté is working on an Ethernet adapter in the form of a PCMCIA card. The credit-card-size adapter, due to ship before the end of this year, is expected to cost less than \$400 and to come in designs for both 10BASE T and thin-net Ethernet cabling, sources said. All users have to do is plug the card into the computer and the network cable into the card.

Asanté reportedly is working on a PCMCIA adapter kit so portable Macintosh users can add the PCMCIA cards to PowerBooks, which don't come with the appropriate slots. Once installed, the kit would allow PowerBook users to plug in Asanté's card, or any one of a variety of add-on cards from other developers, including hand scanner interfaces and storage cards.

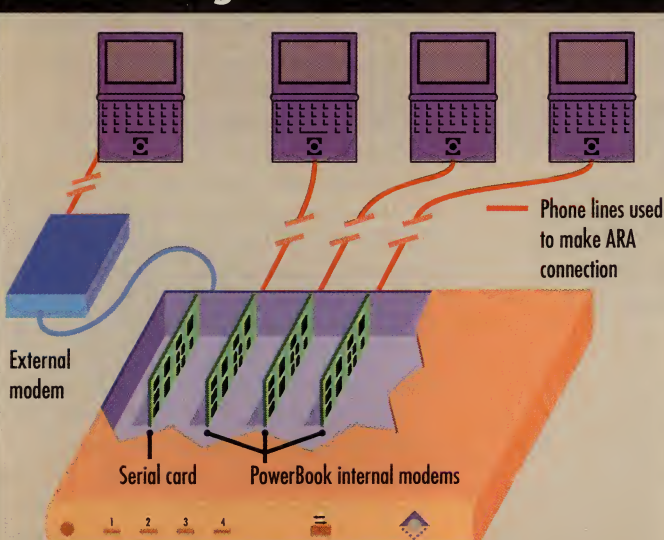
The company reportedly is working on software that may enable many of the cards available for PCMCIA-equipped DOS and Windows-based notebooks to work with its adapter kit in Macs.

Better performance is the biggest advantage of running an Ethernet connection through a PCMCIA card instead of a SCSI adapter, sources said. A PowerBook using a PCMCIA Ethernet card should be able to access a network at speeds comparable to a NuBus-card-equipped Macintosh.

According to Randy Battat, Apple vice president of portable computing, his company is looking at adding native PCMCIA slots to PowerBooks in the future (see story at left).

Asanté also will make versions of its PCMCIA cards for IBM PCs and compatibles. The cards for PCs are likely to ship before the Mac cards, sources said. □

Global Village modular ARA server



Tech Analysis

Inside the PCMCIA storage standard

By Bruce Schneier

Originally a nonvolatile storage standard, PCMCIA has grown to be a much more versatile interface. With its small size and low power draw, it has gotten a lot of attention from com-

puter developers looking to reduce both bulk and power on their portable products.

Apple is evaluating PCMCIA for its PowerBook line, and Newton will ship with a PCMCIA slot; the slot also will support an

Apple-proprietary 32-bit bus called TrimBus. Using PCMCIA, users can plug in cards containing everything from interactive maps to network connectors.

A PCMCIA card is a removable device about the size of a credit card (2.126 by 3.37 inches). It has a 68-pin interface along the short edge that works with eight- and 16-bit computer buses and supports physical access of up to 64 Mbytes of memory. (Apple's 32-bit TrimBus can address up to 256 Mbytes on a single card.)

The standard supports three different card thicknesses: a 3.3-millimeter Type I card, a 5-millimeter Type II card and the recently approved 10.5-millimeter Type III card.

PCMCIA cards fit into a slot that looks something like a floppy disk slot. PCMCIA slots can be found on some IBM PC-compatible notebook computers; some pen-based computers, such as EO Inc.'s 440 and 880; laser printers; and some MIDI (Musical Instrument Digital Interface) instruments.

There are two main kinds of PCMCIA cards: memory cards and I/O cards. Memory cards use one of several different solid-state memory technologies: static RAM; dynamic RAM; EPROM; and EEPROM (electrically erasable programmable ROM), also called flash memory. These cards are almost all Type I. The current generation of memory cards can hold up to 20 Mbytes of data, with 64-Mbyte capacities coming by 1995.

Memory cards can be used for data storage in place of floppy disks or for read-only storage. Some software vendors, such as WordPerfect Corp. of Orem, Utah, sell versions of their MS-DOS software on PCMCIA cards.

The performance benefits of PCMCIA memory cards are substantial. Since the cards are basically an array of memory chips, access time is about 10 times faster than a hard disk. Additionally, since there are no moving parts, power consumption is dramatically lower.

All this performance doesn't come cheap: 20-Mbyte cards currently cost between \$900 and \$1,200 each.

The Type III card case, as well as the recently approved PCMCIA-ATA (AT Attachment) standard, will allow developers to put subminiature rotating disk drives (1.8 inches or smaller) onto a PCMCIA card. Although slower and more power-hungry than memory cards, drive cards will be cheaper and have higher capacities; 32- and 42-Mbyte drive cards already have made their debut.

When Version 1.0 of the PCMCIA standard was released in August 1990, the cards were designed primarily to be used as extensions of system memory.

PCMCIA Version 2.0 enhancements included dual voltage and an execute-in-place (XIP) mechanism. Dual voltage supports 3-volt technology to minimize power consumption; XIP allows applications to execute directly from the card, without first having to be transferred into system memory.

With the introduction of PCMCIA-ATA, users will be able to take the memory card from a Newton and use it on an HP-95LX or a PowerBook, something that couldn't be done with Version 1.0 cards.

Version 2.0 also added support for I/O devices. A Version 2.0 PCMCIA card can contain almost any peripheral device, as long as it fits on the card type. Among the first PCMCIA 2.0 I/O cards to appear are 2,400-bps modems, fax cards, LAN adapter cards and bus interface cards. PCMCIA cards with SCSI ports, Ethernet and token-ring connectors as well as remote pager cards also have been announced. Most I/O cards are Type II.

It is the ability to mix and match PCMCIA cards that makes them attractive expansion options for notebook-computer users. "I can use a modem card when I'm on the road, an Ethernet card when I'm in the office, or a flash card when I need extra storage," said Ben Liberman, an independent Mac consultant in Chicago. □

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Case Study

Purdue hosts E-mail school

By Michael Miley

The Executive Education graduate program teaches professionals via phone lines.

Running a graduate school over the phone lines might appear a daring operation to some, but that's precisely what's going on at the Krannert Graduate School of Management at Purdue University in West Lafayette, Ind.

About 100 busy executives who can't take time off work (or move to Indiana) pursue master's degrees in science and management through the school's Executive Education Program. They do this by submitting assignments over WATS and direct-dial lines via Mac, modem and AppleTalk Remote Access (ARA). Executives from all over the world, including Taiwan, Italy and Malaysia, are "ARA students" at Krannert.

School supplies. "When students enroll at Krannert, they're required to buy a Mac as part of their enrollment," said Malcolm Duncan, a computer consultant for executive education and the man responsible for managing the use of computers in the program. "We outfit the Mac with ARA and programs like [Microsoft] Word, Excel and Mail, and [Clariscorp.] MacDraw Pro and MacPaint. Then, at the beginning of the semester, we bring students in for a four-day orientation. We've been doing this since 1983."

Originally, Duncan supplied them with a terminal emulator tied to a dial-in Unix mail system. The school's biggest problem was transmission quality, since error correction wasn't built in. What's more, students couldn't transfer files.

"I wrote some software on our Unix host to add a file transfer capability to our setup," Duncan said, "but it was more difficult to use than we wanted it to be. We lived with that for a couple of years until better products came out from the commercial community."

The first commercial products included Microsoft Mail and Farallon Computing Inc.'s Liaison, which provided Krannert with a remote AppleTalk connection so students could send and receive Microsoft Mail messages. This was an improvement but still not perfect. Last June, with the departure of one class and the beginning of another, Krannert switched to ARA.

"ARA made connecting remotely a heck of a lot easier, and the easier it is, the more it's used," Duncan said.

Twelve incoming lines.

Other changes in 1992 included moving the ARA servers off Mac Pluses with modems to two multi-port LanRover/E ARA servers from Shiva Corp. Duncan uses both a four- and an eight-port LanRover/E to handle the traffic from six WATS lines and two direct dial-ins. If needed, the school will add more lines and LanRovers in the future.

Duncan provides his students with preconfigured ARA connection documents with aliases loaded into their Apple menus. This makes dial up from remote sites as easy as choosing a menu item. (He doesn't use Ron Duritch's ARA Client, he said, because it's shareware.) Once the students are connected, they're off and running.

In 1992, executive students generally chose desktop Macs for their color screens or low cost — only 14 PowerBooks, outfitted with 2,400-bps modems, were used. This year, Duncan expects more students to choose PowerBook 180s (or their future color-capable siblings), with low-cost, 14.4-Kbps internal modems.

Student file enclosures average about 10 to 20 Kbytes, although they can get as large as 100 Kbytes — about eight minutes of transmission time. Currently, with 2,400-bps modems, Duncan doesn't provide students with file-sharing capabilities. When faster modems become the norm, so will file sharing, and the file servers will be used like dial-in libraries for storing articles, assignments, spreadsheets and the like.

In the meantime, things are working smoothly. "We get about 50 calls a day, on average," Duncan said. "Typically, students call in every other day to pick up or deliver their mail and enclose files — their assignments. The professors respond in kind, sometimes without ever producing a paper copy."

There are some limitations, however. "With Microsoft Mail 3.0, remote users can't automatically save messages on their home Macs or cue them up for batched sending," Duncan said. "Version 3.1 will fix those problems when we get it installed."

Multiprotocol ARA. Krannert's network management and administration also are done remotely. Using ARA and a LAN version of Farallon's Timbuktu, Duncan can control any office device from his Mac at home.



Computer consultant Malcolm Duncan inspects the network system for the Executive Education Program at Purdue University.

JOHN STARKEY

"I make the connection via ARA, fire up [Farallon's] Timbuktu and can control our mail server, our file servers or any other Mac on the network that has Timbuktu installed," Duncan said. "In fact, whenever I have network-intensive work to do, I control my Mac on my desk at work and do it from there. This cuts down the traffic that goes over the ARA connection."

Duncan accesses his Unix hosts in a similar way. Running MacTCP, ARA and NCSA Telnet, a public-domain terminal emulator from the National Center for Supercomputing Applications in Champaign, Ill., he can initiate a Unix session on his home Mac.

He then can access any Unix service that is in-house or on the Internet and read or post messages to Usenet news groups via News-Watcher, a free application by Apple's Steven Falkenburg. On occasion, he's used Apple's MacX from home to run X Window System applications on a Unix host, but neither he nor Apple

recommends remote MacX.

And even though he's got a fast T3 connection to the Internet from his office at Purdue, sometimes he'll use ARA and NCSA Telnet to access a public FTP (File Transfer Protocol) host. In this way, he's picked up the latest CD-ROM drivers from Apple's FTP host in Cupertino, Calif., and updates to Columbia AppleTalk Package from a university in Australia.

Increased attendance.

Despite the management conveniences for him, Duncan said the real benefit of ARA is increased student use: "ARA and Microsoft Mail have greatly simplified the transfer of files and memos, and students are collaborating more with one another," he said. "This improves their work at Krannert."

Does this mean that Duncan is looking to use groupware remotely? "Not really," he said. "Lotus [Development Corp.'s] Notes is too expensive, though its cross-platform capability is pretty tempting." □

Case Study

Security prescription for Vertex

By Michael Miley

Engineers and managers work with sensitive data from home.

Remote access for a graduate school is one thing; dial-in access for a private laboratory with proprietary data is another. But that's what Brian Perry, systems manager in the Computer Systems Group at Vertex Pharmaceuticals in Cambridge, Mass., had to set up.

"We needed something more secure than simple ARA (AppleTalk Remote Access) passwords or a call-back strategy," Perry said.

Security check. Vertex scientists researching therapeutic drugs

often need to connect to the office when working from home or the road. Some 25 do so on a regular basis, connecting to their network of 140 Macs, seven networks and three file servers. ARA is used up to 20 times during a work day, usually in the evening hours; on weekends, remote traffic doubles.

Proprietary information, critical to the company, is sent back and forth, so access is restricted through a Cayman Systems Inc. GatorLink ARA server that talks to

See Vertex, Page 54

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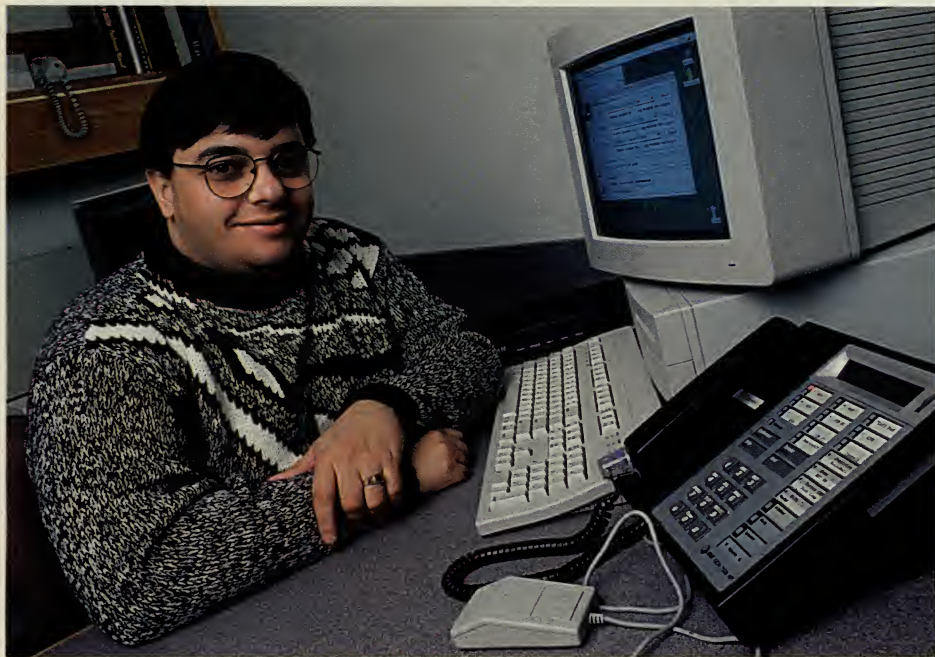


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CINDY LOO

Brian Perry, above, systems manager for Vertex's Computer Systems Group, takes care of the company's remote access network. Below right, Donald Cohen, CEO of Cimarron International, said Apple's latest PowerBooks are "wondrous" for giving color presentations.

Vertex

From Page 52

ACE/Server, a Unix-based security system from Security Dynamics Inc. of Cambridge, Mass.

"We picked the GatorLink because it works so well with the ACE security system. When our people dial up from the outside, they have to go through a security check that's pretty foolproof," Perry said.

Every potential dial-in user is issued a credit-card-size device from Security Dynamics with an LED display showing an algorithmically defined number that changes every minute. When a scientist or manager phones in using ARA, the call is picked up by the GatorLink, which is linked over the network to the ACE/Server. Each user logging onto the GatorLink is asked for a name, a personal identification number (PIN) and the six-digit number displayed on the ID card.

The seemingly random sequence of numbers is time-synchronized with the ACE/Server, which is set to the National Atomic Clock for Greenwich Mean Time and usually is accurate to within a couple of seconds. (The algorithm can compensate for small time differences caused by drift).

The result is that, in addition to the GatorLink account name and password security, the ACE/Server knows what number is displayed on each card and can verify that the dial-in user is a card holder.

"This gives us a two-factor security clearance between the PIN and the rotating number," said Perry, referring to the number of hoops callers must jump through before they're admitted to the system. "A call-back system wouldn't have worked because our scientists could be traveling and staying at a hotel, and usually you need to route incoming calls through the hotel switchboard."

"What's more," he said, "call-back systems can be defeated fairly

easily by timing another call so that the ARA server thinks it's getting a dial tone and phoning you back."

Once inside. Upper management and scientists at Vertex use the ARA connection to send and receive Microsoft Mail, access AppleShare file servers and exchange schedules with Now Software Inc.'s Now Up-to-Date group calendar back at the office. Files from ChemDraw and Chem 3D, chemical-modeling programs from Cambridge Scientific Computing Inc., are sent back and forth by Vertex scientists. With ARA's automatic data compression, the temptation to send large files is there; 5-Mbyte to 6-Mbyte file transfers, though infrequent, are not unheard of. Perry has tested remote multi-user database access as well, with less success.

"I've run [Clariscorp's] FileMaker Pro over ARA with the application on my Mac at home and accessed our data file at the office," Perry said. "As I expected, it was too slow for production use, even at 14.4 Kbps."

Perry is looking into porting the FileMaker data to a stand-alone database from Oracle Corp., and he'll test both client-to-server and client-to-client-to-server strategies (where a client on the LAN does the querying) in the future. In the meantime, Perry is experimenting with 64-Kbps data channels on ISDN (Integrated Services Digital Network) lines for greater throughput.

"Letting scientists access in-house data from home would be very useful," Perry said. "Our databases store chemical models and related data that can be used as examples for midnight brainstorming."

He's also looking to test Pacer Software Inc.'s PacerForum for an in-house bulletin board system and Lotus Development Corp.'s Notes when the Notes for Macintosh client is available.

Vertex runs TCP/IP over its net-

work, with connections to the Internet. To access resources on Unix hosts, Perry runs Apple's MacTCP on his Mac at home and uses ARA to make the dial-in connection. He then fires up NCSA Telnet for remote terminal sessions.

In this way, he accesses hosts on the Internet directly, using Telnet to get library catalogs from universities or download software from different Internet archives. He can send Microsoft Mail destined for the Internet from his Mac at home; messages are delivered through LAN-based gateways.

Managing from home. In the meantime, as you'd expect, Perry finds remote management of his network considerably easier. With ARA and Farallon Comput-

ing Inc.'s Timbuktu, he can control Macs remotely or monitor network statistics, such as bridge or router loads. Other tools he uses remotely include network monitoring software such as NetWorks from Caravelle Networks Corp. and CheckNet from Farallon.

Perry said the GatorLink simplifies ARA administration since it gives one point of entry to the network. Formerly, when two ARA-server Macs were set up, new user names had to be added to both. Now adding names is done at one location, the ACE/Server, where they're authorized for the GatorLink. The combination of ARA's ease of use and Security Dynamics' authentication system makes Vertex open and available to the right people and a tough nut to crack for everyone else. □

Users prefer built-in video output for their PowerBook presentations

By Jim Leeke

Did third-party products make or break video-out?

After Apple introduced the PowerBooks, portable presentations were among the few graphics tasks that remained easier to perform in the DOS world. While PowerBook owners could turn to third-party add-in boards or external SCSI devices for connecting their portables to monitors and display devices, this arrangement sometimes resulted in frustration, disappointment and even resentment.

Apple eventually remedied the problem, for the most part, by adding video-out capabilities to its recent PowerBook models, but users had to make do with third-party solutions for the first year.

Six of one ... Third-party vendors "fulfilled a real need in the marketplace," said Bruce Cooper, Apple PowerBook product manager.

See Presentations, Page 56



STEVE ZAVOYNY

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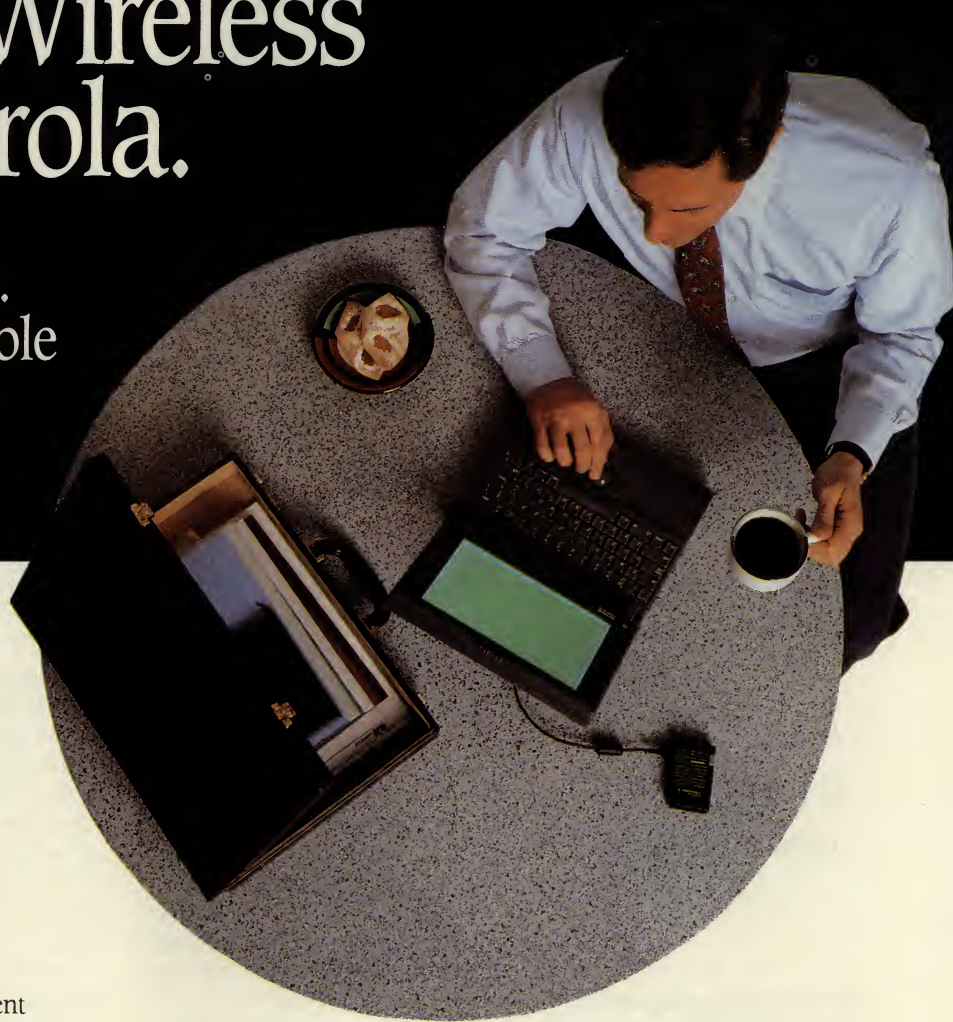
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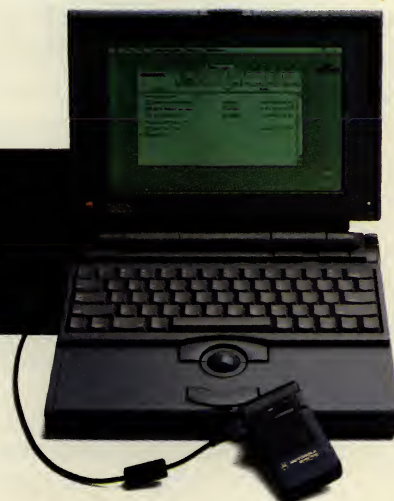
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Presentations *From Page 54*

er. But he acknowledges that the products varied widely in quality. Some users were satisfied with the hardware, while "others were frustrated that Apple was not offering it. It really pointed out a way to enhance our PowerBooks," he said.

Donald Cohen, CEO of Cimarron International, a business-communications company in Denver, returned six video-out boards to one vendor that, he said, "has not earned the right to get back into my good graces."

Tim Holmes, a staffer at BMUG Inc. in Berkeley, Calif., and leader of the user group's PowerBook

"[A stand-alone PowerBook] still makes a fabulous impression. Some of my best presentations I've made at 35,000 feet."

— Donald Cohen

special-interest group, said he believes that third-party boards for PowerBooks were "too expensive and of borderline quality."

"I think these new [Apple] machines will make a big difference" to people trying to give portable presentations, Holmes said.

Tom Santos, owner of MACadam, a San Francisco computer store, said that some video-out hardware got a "bad rap" but agreed that there were legitimate complaints about the boards, including fuzzy displays, flimsy connectors and electrical shorts.

Is the future so bright? The video-out capabilities Apple added to the PowerBooks let users connect to most VGA monitors, which makes portable presentations more feasible by giving access to "a large part of the [video-] delivery devices out there," Apple's Cooper said.

But some users still question the feasibility of giving a presentation from a PowerBook using standard presentation software. Holmes and Santos said they expect people to buy the machines for portability, not slide shows.

"The people who are buying PowerBooks [and] doing presentations would probably be 1 percent," Santos said.

But Cimarron's Cohen, who has developed a number of portable presentations for clients, said he disagreed. When Apple rolled out the new models, the opportunity for

portable presentations "was not part of an overwhelming theme we heard back" from the resellers, Cooper said. But within Apple, "it seemed to us that the people who are buying PowerBooks are the [same] types of people who are doing presentations. It strikes us as obvious," he said.

Details. "Apple's solution for color is absolutely elegant," said Cohen, who has several 160s on order. He cautioned, however, that "there are a few presentation design issues to consider."

The PowerBook's screen size of 640 by 400 pixels, for example, is smaller than a standard 640-by-480-pixel Mac or VGA monitor. To create the same image for both, the smaller display size should be used, he said. Also, since the newer PowerBooks have gray-scale displays while outputting 256 colors to external monitors, color selection for presentation images may need adjustment to be effective and visible in both formats.

Presenters also must choose from a variety of display options, including color monitors, LCD panels or large-screen projectors. The choice may depend largely on the audience. A 13- or 16-inch monitor can be fine for a few people at a table, presenters said, while a larger device is necessary in a hotel meeting room.

And some users prefer running shows on television sets or on projectors that use NTSC signals. For this trick, the PowerBook Duos are easier fits, but they require external, third-party docks.

The Whitley Group, a Charlotte, N.C., multimedia design and production company, designed animated presentations for the Duo 230, which will be projected using a third-party NTSC converter.

"I'm really confident of the PowerBook," said President Bill Whitley. "The color output from it is perfect; it's the quality of the dock's output I'm waiting to see."

If third-party converters prove reliable, "I think you're going to see a lot of people going to TV sets," he said. "It breaks your heart to build an animation [and run it] on a clunky panel or projector that just washes the thing out."

Cohen added that a stand-alone PowerBook "still makes a fabulous impression. Some of my best presentations I've made at 35,000 feet. I think it's a wondrous marketing tool."

Debra Mullin, a vice president at Colorado National Bank in Denver and a Cohen client, said the first time she saw a PowerBook presentation, "it just blew me away. I said, 'I have to have it.'"

But for presenters who need a larger color format, the new PowerBooks offer "a starting price of about \$2,300 to do video-out," Santos said. "I think that's pretty reasonable." □

Upgrade hassles common for PowerBook users

By Mitzi Waltz

A RAM upgrade for a PowerBook is not as easy as one for a desktop Mac, and the difficulty is even greater when the computer is in another city. These and other logistical problems with PowerBook upgrades have turned some managers off, but because of the machines' popularity, nearly everyone has to deal with the hassles.

Upgrade by mail. When J.T. Harvey, area agent manager at AT&T Co. of Indianapolis, decided to upgrade the modems in his mobile work force's 22 PowerBooks, he learned a hard lesson.

The best plan he could come up with on short notice was having about three salespeople mail in their PowerBooks daily through Federal Express over a two-week period. The computers were then sent for upgrading at a local dealer in Indianapolis. While none of the machines suffered damage in transit, the process of mailing portables back and forth seemed like it would never end, Harvey said. Next time, if possible, he'll let salespeople do the upgrades closer to home.

"Most of them are in areas where there is an authorized Apple service center," he said. "I think we can have them negotiate a price locally and then go into their local dealer."

Unfortunately, Harvey said, that will make the service contract AT&T has in Indianapolis less useful, but there is other work to do

besides wrapping packages for the Federal Express messenger.

Apple Service. For companies whose employees are not close to an authorized dealer, Apple Service offers an alternative. Storage Technology Corp. of Louisville, Colo., relies on Apple's national service program for upgrading the 270 PowerBook 170s that roam with the company's outside sales representatives.

"It's a really slick process that eliminates a lot of downtime here," said Tom Campbell, project manager for field automation at Storage Technology. Campbell uses Apple's PowerBook hot line to determine if there's a hardware problem, which could be solved with a swap, or an operational bottleneck that more RAM or disk space would fix.

"Apple sends out a packing box overnight to the end user, and they can ship it in as soon as they get it," he said, adding that it takes two to three days for the upgrade, after which the PowerBook is returned by overnight mail. Apple pays the postage and even makes available third-party RAM from TechWorks Inc. along with Apple-labeled internals, he said.

Campbell's only problem with the service is that Storage Technology employees sometimes drag their feet: "I wish the end users would be a little more diligent about packing up their

See Upgrades, Page 58



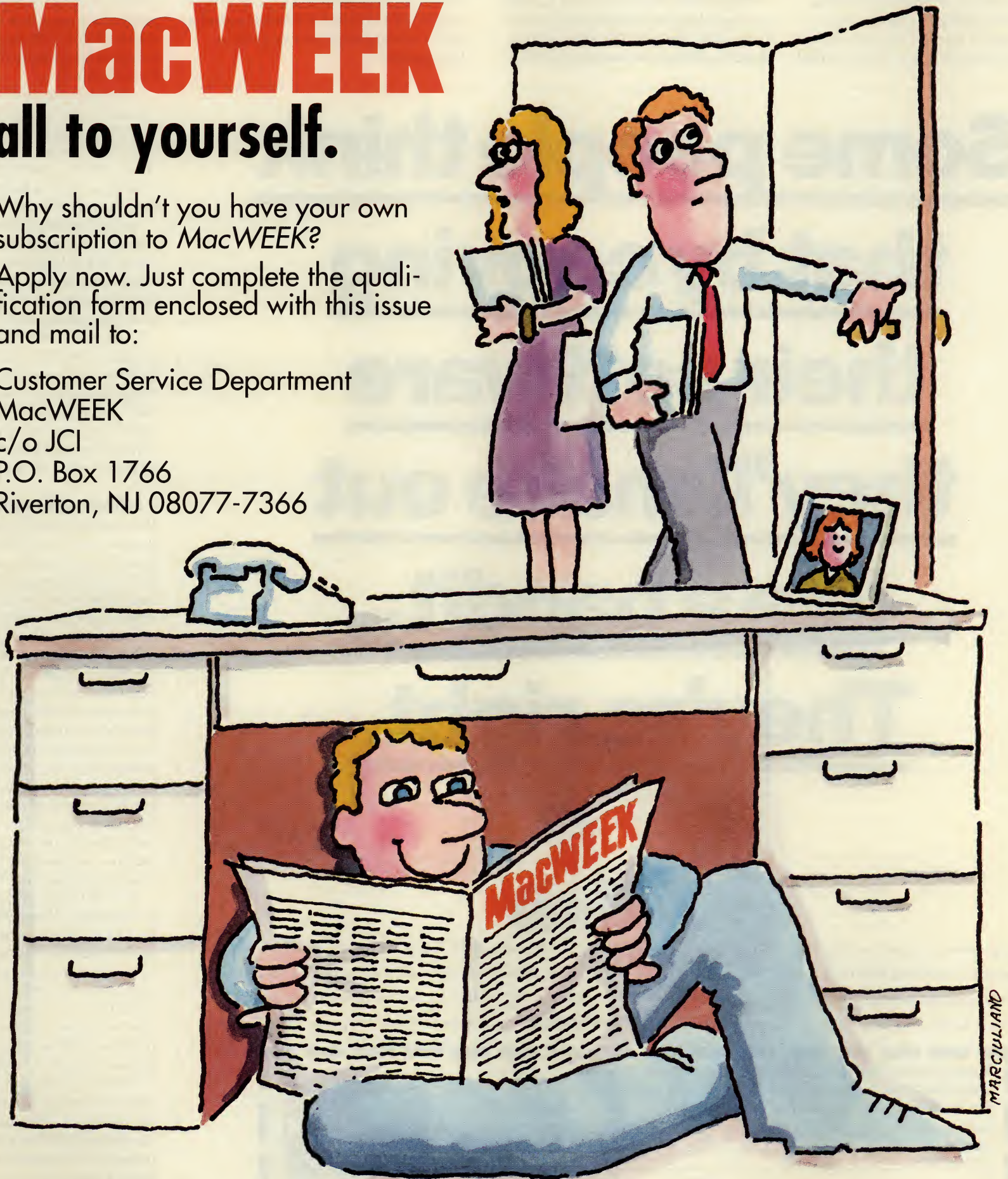
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Upgrades

From Page 56

PowerBooks and sending them out when an upgrade is scheduled."

Techs on call. In general, Apple dealers and third-party companies selling PowerBook add-ons have not jumped to provide similar service, although a few do offer a mail-in option. Computer Care Inc. of Minneapolis, for example, has an Apple-certified

technician on hand to install RAM without voiding the warranty on mailed-in PowerBooks. Purchasers have to set up the transaction over the phone, said Mary Depew, Computer Care general manager, who added that larger companies usually handle mass upgrades through dealers.

"Big accounts like Aetna [Life & Casualty Co.] and 3M get personalized service at the dealer level," she said. "We encourage that dealer involvement because with the Power-

Book having to be opened up, there are warranty issues if the customer does the upgrade."

Some of the largest PowerBook-using sites, including Eastman Kodak Co. of Rochester, N.Y., have their own Apple-authorized technicians who can handle PowerBook upgrades in-house. These companies can either use overnight services to get units to and from users or schedule upgrades for the traveling employees' next stop at headquarters.

Personal responsibility. The fine print of Apple warranties aside, the do-it-yourself approach to PowerBook upgrades apparently is quite popular at corporate sites, especially those fielding a relatively few PowerBooks.

General Atomics of San Diego has only one PowerBook 170 in heavy rotation among several managers and physicists, and the company plans to purchase a 180 soon. But staff scientist Robert Fagaly said he feels personally responsible for handling upgrades on his PowerBook 140.

"Obviously, they don't have even close to identical hardware requirements," Fagaly said. For a recent RAM addition, he took his machine back to the original dealer himself. Desktop Mac upgrades generally are handled in-house at General Atomics, Fagaly said, so this was a departure from the norm.

At the Corporate Systems division of Amdahl Corp. of Bellview, Wash., the story is similar. While IBM PC and compatible notebooks are updated by a notebook guru in the field office of engineer Steve Smith, his personal PowerBook usually gets self-service.

"I just put a Global Village [Communication Inc.] modem in it, in fact," Smith said. But for an 8-Mbyte RAM upgrade, Smith ordered his memory from The Chip Merchant, a mail-order house, and contracted with a local computer store for installation. "My strategy has been order by mail, decide if I can do it myself and if so, do it."

Software updates, hardware options.

Many managers said that software upgrades are much easier to handle from a distance, thanks largely to products that allow users to dial in to local networks and download the latest software, or have it installed automatically over the remote link. At AT&T, however, the remote-update approach has not met with universal favor, Harvey said.

Some managers wish Apple had learned from Outbound Systems Inc. (which shut down operations last month) and made PowerBook hardware upgrades user-installable. At Hawley Industrial of Bridgeport, Conn., for example, Mac-compatible Outbound notebooks were purchased instead of PowerBooks largely because of the ease of hardware swaps, said manager Andy Clay. "Outbound upgrades were designed to be very modular — just plug-and-go — as opposed to Apple's, which require some technical expertise," he said.

But with Outbound out of business, Clay is in a quandary. "I'm speechless," he said. "I've got a lot of garbage in my users' hands all of a sudden. I imagine what we'll do is slowly try to turn these around at a low price to people who just want a notebook and reinvest in the PowerBook." (At press time, there were reports of former Outbound employees setting up a technical-support, repair and upgrade center for Outbound products.)

Now Clay, along with other PowerBook users, will once again be wishing for an easier way to upgrade. While most mail-order vendors thoughtfully throw in a PowerBook case opener, do-it-yourself instructions and telephone support with their internal upgrade products, managers such as Storage Technology's Campbell would rather not take the risk.

"I'd just as soon have somebody else do it," he said, a sentiment that, if widely held, may soon put more PowerBooks in the hands of overnight courier services. □

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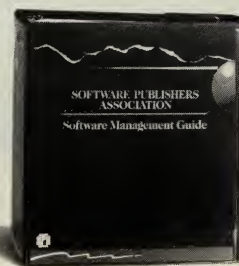
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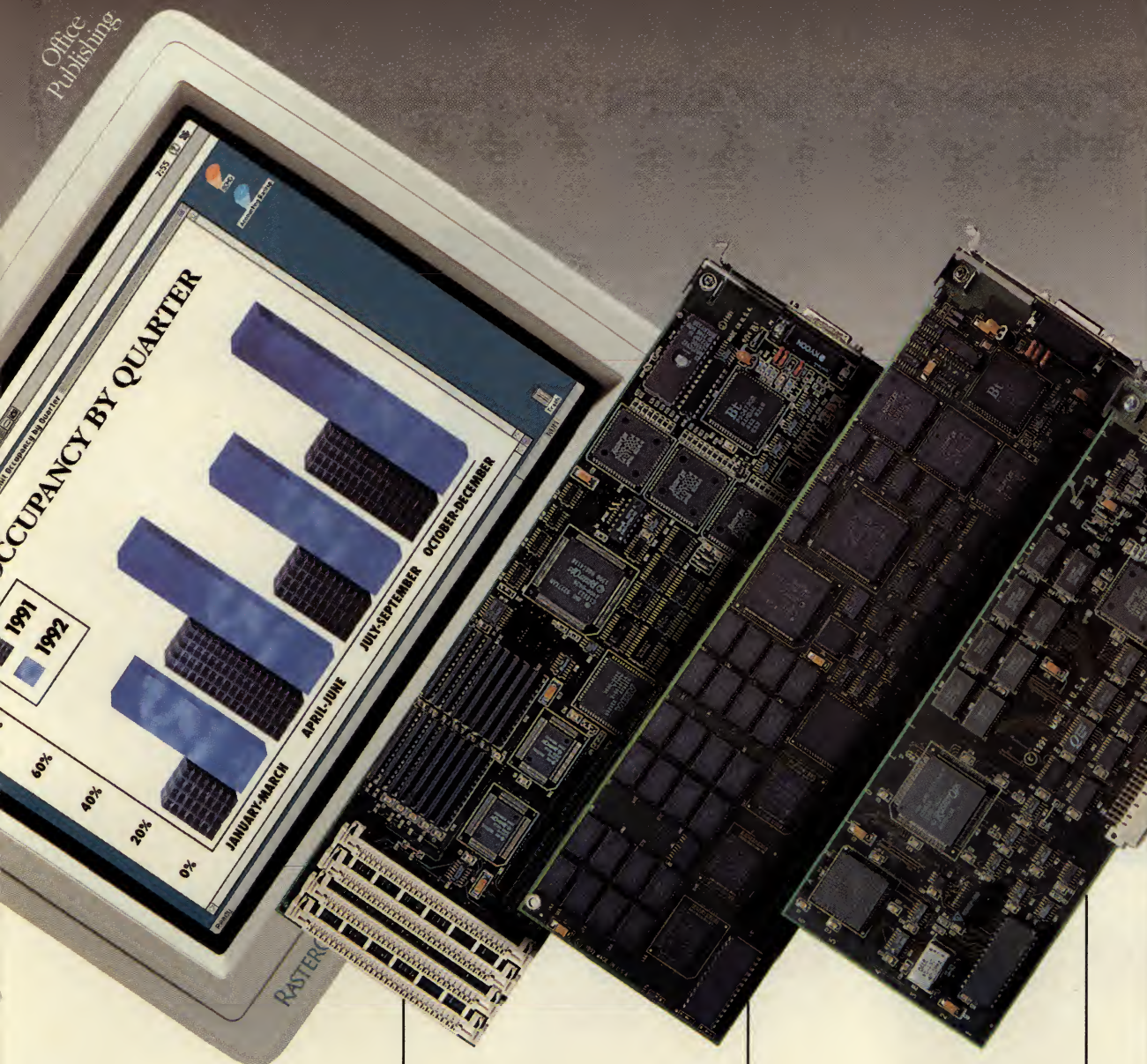
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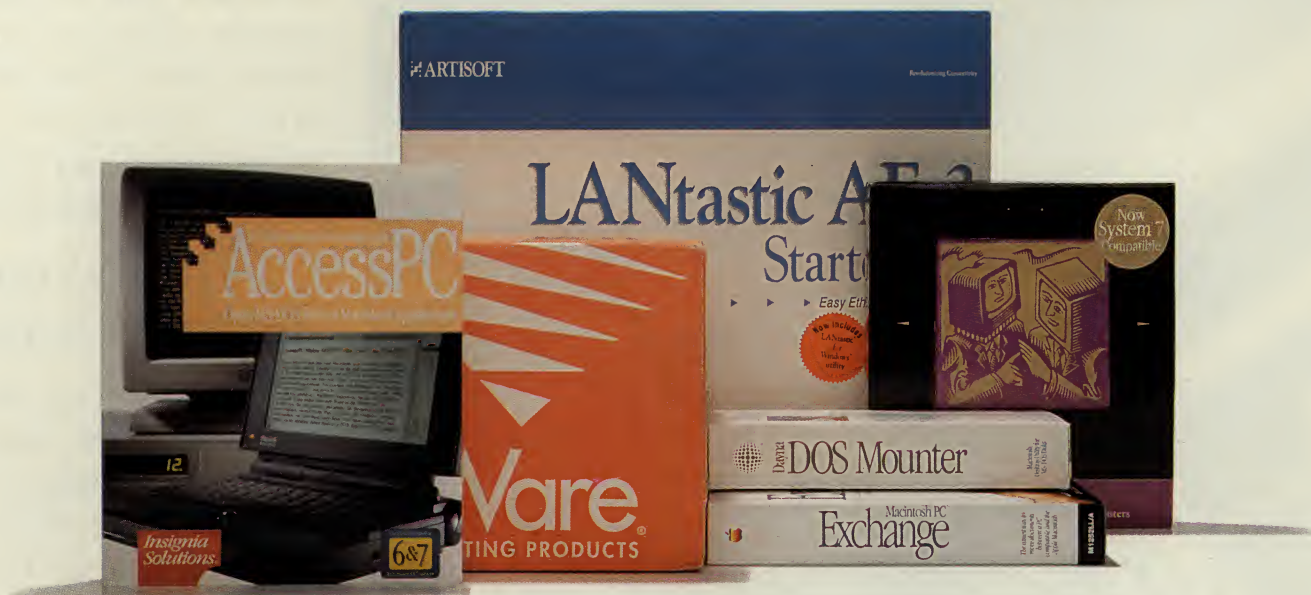
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Reviews

► ColorAccess. See Page 70.
► Kai's Power Tools. See Page 71.



Comparison

Sync or swim: Applications keep current on file synchronization

MacWEEK examines programs from Inline Design, Qdea, Xanatech and Leader Technologies.

By R. Bradley Andrews

File synchronization has become a critical issue with the proliferation of the PowerBooks and telecommuters.

Frequent travelers, such as salespeople, as well as those who just need to take their work home for the evening, need to copy a file from one machine, modify it, then replace the original with the changed version.

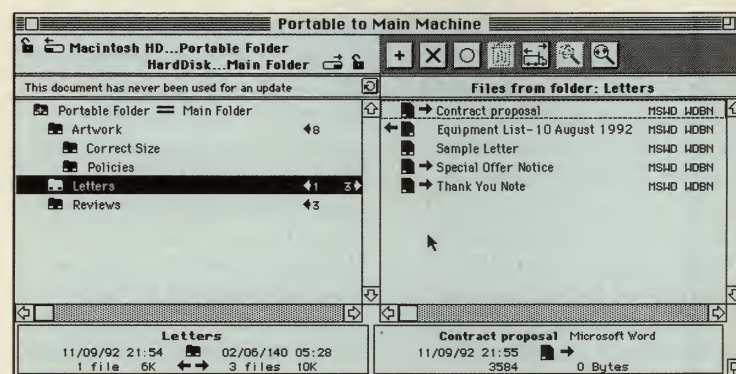
Though it is possible to reconcile files with the Finder, or by scripting with programs such as UserLand Software Inc.'s Frontier, four vendors now offer programs specifically designed for this task: Update!, \$49 from Qdea; PowerMerge, \$129 from Leader Technologies Inc.; Inline Sync, \$129 from Inline Design; and ShuttlePilot, \$98.88 (\$59

until Jan. 31) from Xanatech Inc.

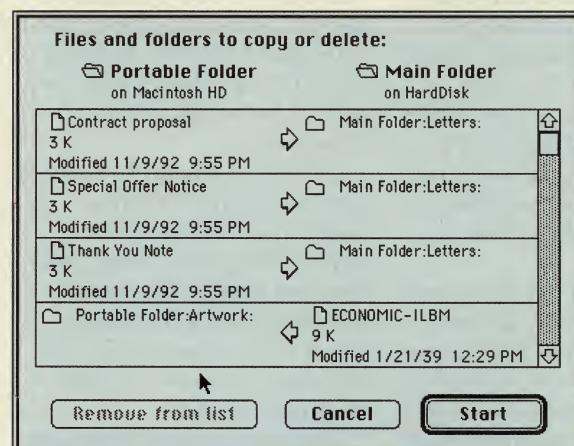
In addition, two other products offer synchronization as a major component of their feature sets: Magnet, \$129.95 from No Hands Software (see story, next page), and Norton Essentials for PowerBook, \$129 from Symantec Corp. (see story, Page 66).

Things in common. All these packages share some features: File comparison is limited to folders that can be mounted simultaneously on a single Macintosh. The simplest way to get both the original and target folders to appear on the same machine is with AppleShare or System 7's file sharing. Removable media also

See Sync, next page



The main window in Leader Technologies' PowerMerge displays a wealth of information about upcoming file transfers. You can perform a variety of functions on selected items before they are synchronized, including cycling through potential file collisions.



Qdea's Update! shows files to be synchronized and the direction they will move. The Remove from list button prevents transfer of selected files, but they will appear at the next synchronization unless settings are changed.

RATINGS KEY

- ◆◆◆◆ Excellent
- ◆◆◆ Very good
- ◆◆ Good
- ◆ Fair
- ◆ Unsatisfactory

score card

File-synchronization software

Four new products offer synchronization of files between two Macs. These programs, while spurred largely by the popularity of the PowerBooks, are by no means exclusive to the portable crowd.

- **Inline Sync** from Inline Design handles the complete spectrum of file synchronization. It takes longer to start up because it reads the entire directory structure of each mounted volume, but this slight delay is overcome by its full range of features.
- **PowerMerge** from Leader Technologies Inc. offers simplified automatic execution and the simplest interface of the lot. It is most effective when used interactively and has many features that help users understand and control file transfer.
- **ShuttlePilot** from Xanatech Inc. has a good interface, but its inability to synchronize nested folders means you must select each folder pair you want synchronized, which can be extremely annoying. The company plans a version that will rectify this problem, which should increase its value.
- **Update!** from Qdea is the low-budget choice of the group. It has some automation capabilities, although it also provides reasonable interactive control. The manual is necessary reading and reveals many features hidden beneath the program's surface. It has the least-flexible file-collision features of the group, which will leave it out of contention for many users.

	Inline Sync	PowerMerge	ShuttlePilot	Update!
Overall value	◆◆◆◆	◆◆◆◆	◆◆	◆◆◆◆
Version tested	1.0	1.01	1.01	1.1
Price	\$129	\$129	\$98.88*	\$49
Performance	◆◆◆	◆◆◆	◆◆	◆◆◆◆
Ease of use	◆◆◆	◆◆◆◆	◆◆	◆◆◆◆
Features	◆◆◆◆	◆◆◆	◆◆	◆◆◆◆
Documentation/support	◆◆◆	◆◆◆	◆◆◆	◆◆◆◆

*\$59 until Jan. 31.

STATUS*Mac 3.0 stays true to heritage

Still shows respect for users' privacy

By Jonathan A. Oski

Today's well-populated niche of AppleTalk network-administration tools was established just a few years ago by STATUS*Mac. Now in its third generation, STATUS*Mac 3.0 adds much-needed functionality while maintaining its focus on network administration without sacrificing end-user privacy.

Network administration is a controversial subject with many end users who wholeheartedly reject the idea that administrators need complete configuration profiles to offer high-quality support. STATUS*Mac was developed by Pharos Technologies Inc. with the notion that support requires a balanced interchange of information between users and network administrators. (ON Technology Inc. is now responsible for STATUS*Mac sales and support.)

While competitors such as TechWorks Inc.'s GraceLAN, MacVONK•USA's netOctopus,

Sonic Systems Inc.'s Radar and CSG Technologies Inc.'s Network SuperVisor added features that gave administrators greater control of end users' workstations, Pharos and ON have remained steadfast in their respect for the privacy of end users, despite the

fact that this approach means network administrators who use STATUS*Mac are significantly less empowered.

What's new? STATUS*Mac 3.0 adds a number of new features.

See STATUS*Mac, next page

score card

STATUS*Mac

ON Technology Inc.

Overall value ◆◆◆

Version tested: 3.0

List price: \$749*

STATUS*Mac 3.0 remains true to its heritage as an unintrusive network-administration tool. While it allows the network administrator to easily collect information and distribute files throughout a network, the user is given ultimate control over all operations. This philosophy has been part of the foundation of STATUS*Mac since its incarnation, but because of this, STATUS*Mac does not provide the network administrator with the same level of control as some competitive products. The new release adds support for software distribution and includes the capability to collect profiles from networked printers. Many existing users also will welcome performance and interface improvements. Deciding whether STATUS*Mac is the right tool for your organization comes down to a trade-off between its respect for users' privacy and its resulting lack of control features.

Performance ◆◆◆
Features ◆◆

Ease of use ◆◆◆◆
Documentation/support ◆◆◆◆

*20-user pack; \$2,699 for 100-user pack. Upgrades: \$5 per user; free for 25 users for those who purchased after May 10, 1992; free for 100 users for those who purchased an unlimited version.

Sync

From previous page

can be used to transfer a reference version of the folder structure between unconnected machines, but this often can be a problem with large folders.

All folders beneath the main folder must be identically named. If the name of a subfolder is changed on one system and not the other, the synchronization process will create a copy of both folders on each machine, leading to duplicate data. ShuttlePilot works only on folder pairs, not entire folder trees and, therefore, has the dubious distinction of avoiding this problem.

One problem that can occur with synchronization is file collision, which happens when you've changed two versions of the same file in both folders or have two different types of files with identical names. File collisions can cause these programs to overwrite older versions and destroy data. Most of these programs warn you prior to overwriting such files or will even copy both versions to both folders.

Synchronizing files implies overwriting one version of a file with another, and this is an area fraught with danger. For example, files frequently accessed by multiple users off a server are not good candidates for synchronization. In general, careful organization and frequent synchronization will minimize the chances of lost data.

Getting updated.

Update! assigns each folder its own Settings file that specifies which items to synchronize and any options associated with the folder's files. It can be set to complete most tasks in the background.

Update! includes a complete set of Include and Exclude filters that determine which files will be copied when the synchronization is run. Like many backup programs, Update! has an optional setting that automatically verifies files when copied. This may be necessary when you are using floppy disks, for example, but it adds to the time required to complete the process.

Prior to an interactive synchronization with Update!, detailed information about the files that will be moved and the direction they will be moved is presented to the user. Only files that meet preset filter conditions are shown, and you can remove any files from this list.

One strange "feature" we noticed was that the synchronization progress window stays on the screen, forcing you to click on its close box. Update! also simply ignores file collisions and completely replaces the older file with the newer one, which will make many users nervous.

Several nice options round out the package: One folder in a pair can be designated as a Master, which causes the other folder to always look exactly like the Mas-

An attractive option

We found that No Hands Software's \$129.95 Magnet was far more than just a file-synchronization tool when we reviewed it in-depth (see MacWEEK, Oct. 12, 1992).

The program requires System 7, and it uses Apple events to automatically perform many Finder tasks. Magnet is designed to run continuously in the background.

Magnet has a special Synchronize menu command that brings up a dialog from which you select folders to synchronize. Dragging two folders to the Magnet program icon also creates a synchronization agent.

Once the folders are selected, you press the Sync button to create the two necessary agents, one for each direction of the process. Once they are created, agents are set to automatically run at start-up. You also can run a synchronization agent during idle periods, when you mount a specific volume or at shutdown.

A synchronization agent can use AppleTalk Remote Access to automatically log onto a remote machine and perform synchronization at a preset time, such as when phone rates are low.

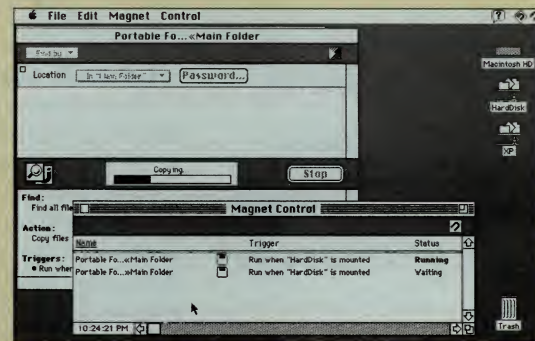
Although Magnet's default is to synchronize all files in the target directory, it can filter files based on several common characteristics, including file type and size or whether the file is an application. Once the process is begun, the latest version of each file is moved to both directories.

A file collision occurs when a similar file name is used in each directory for two files that have been created by different programs. If such a condition exists, Magnet will

append a number to the name of the file before copying it. This serves to preserve both files, but a sudden proliferation of files can leave an unaware user confused.

When a file has been modified on both machines, Magnet copies the newer file to both directories, but it also places the older version in a Conflicts folder. This method is very reasonable and keeps both files around for examination, although it also can cause disk space to swell with extra files.

Going beyond the automatic features and triggering events requires more work than with dedicated synchronization applications, but the manual does a good job of explaining this procedure. — By R. Bradley Andrews



No Hands Software's Magnet lets you set Finder events as triggers that fire a synchronization agent. Agents can automate many Finder tasks besides synchronization — for example, automatically backing up volumes.

ter after synchronization; and actions such as ejecting a disk or shutting down your Macintosh also can be automatically performed when a synchronization is complete.

Update!'s manual covers all the necessary information needed to run the program, including a small

but very useful troubleshooting section that discusses common problems.

The urge to merge. PowerMerge from Leader Technologies also focuses exclusively on the synchronization task. Its automatic scheduling capability is limited to

synchronizing upon program start-up. The program has the most detailed interface of the programs tested.

PowerMerge creates a separate settings file for each folder to synchronize. It scans selected folders and presents you with a list of all the files and folders that will be

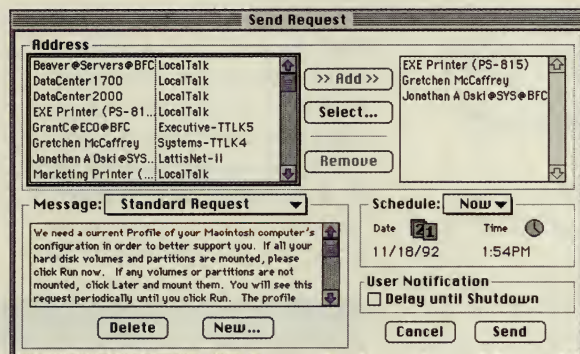
STATUS*Mac

From previous page

The most predominant is the capability to distribute software updates to clients throughout the network. This capability, present for some time in products such as netOctopus and GraceLAN Update Manager, has become a requirement for most AppleTalk network administrators who must cope with an ongoing flood of major and minor application and system-software updates. In addition, STATUS*Mac now can retrieve profile information from networked PostScript printers.

STATUS*Mac for One — billed as a personal profile management utility — also is included. It allows you to build profiles for a single workstation and view the information in a format similar to that of the STATUS*Mac Browser.

Building on STATUS*Mac's extensive reporting capabilities, Version 3.0 adds charts to display counts by CPU type, system-software version, installed RAM and other configuration parameters. Some additional profile items also have been added to enhance the reporting features, especially



with respect to exploiting the features of System 7.

Installation. First-time installation of STATUS*Mac requires that you use an installer application at each user's workstation. STATUS*Mac provides a single level of security based on the Chooser/Owner name on the administrator's Macintosh. After installing the STATUS*Mac administration software on the manager's workstation, you can designate this person as the administrator when installing the STATUS*Mac client software throughout your network.

We find this architecture both tedious and limiting. It is tedious to

The process of collecting "status" information from the Macs and printers on your network with STATUS*Mac begins by issuing a profile request.

store-and-forward architecture, eliminating subsequent installation hassles, but this feature is found in all network-administration products we have reviewed. STATUS*Mac goes further to ensure the accuracy of information maintained within its database by automatically rescanning all clients as part of the upgrade process. This is noteworthy since accuracy is the foundation for successful implementation of a network-administration strategy.

Profiling. Profiling, or retrieving configuration information, is an integral process in using STATUS*Mac. You begin the profiling process by selecting the nodes you wish to profile and then issuing a profile request. ON provides a few canned requests, and you can create your own. The wording of these requests is fundamental to users' perception of the product and the profiling process.

The sample messages provided by ON are well-written and emphasize the importance of cooperation with profile requests and fostering a working relationship between network administration

the degree that you must manually reinstall the software to change the security settings on client workstations. The single level of security limits you from establishing a hierarchy of network administrators whereby a lower-level administrator can be responsible for a limited set of clients and higher-level administrators can oversee a wider universe of clients. This tiered approach is offered in competing products such as GraceLAN, netOctopus and Network SuperVisor and allows a more flexible approach to network administration.

Upgrades of STATUS*Mac's STATUS Profiler control panel are distributed automatically using STATUS*Mac's peer-to-peer

and end users. You can trigger profile requests so they are sent immediately or at a specified time.

The profiling process relies on STATUS*Mac's ADSP (AppleTalk Data Stream Protocol)-based store-and-forward messaging system. This allows you to send requests to users who are not logged on and further allows them to respond when the network-administration application is not active. When users receive profile requests, they can run the profile immediately or defer it to a later time. Since the profiling process can take up to 15 minutes or longer, depending on the configuration of the workstation, this is an instance where STATUS*Mac defers control to end users to minimize any negative effect on their use of the workstation.

Profiling captures Macintosh configuration information for 16 different categories, including Apple Desktop Bus devices, applications, CPU, desk accessories, drivers, fonts, floppy drives, extensions, monitors, NuBus boards, SCSI devices, System files and mounted volumes. STATUS*Mac 3.0 also captures

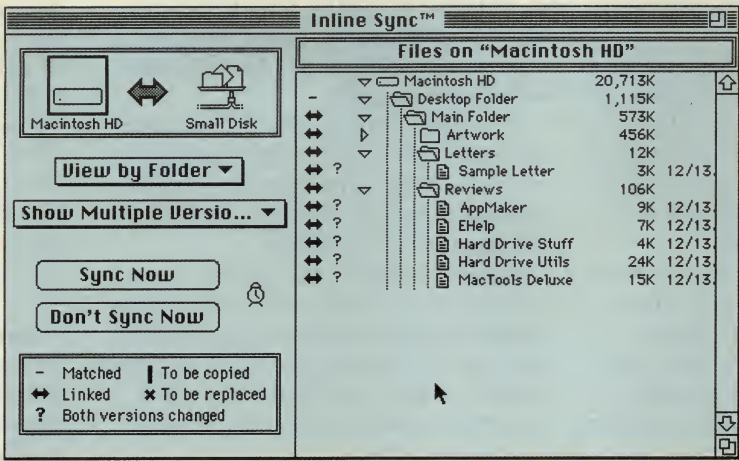
moved. Although it displays quite a bit of information on this view, the view is not crowded and is easy to read and follow once you familiarize yourself with the meaning of PowerMerge's many icons.

The left side of the window shows the folders being compared and how many files in each will be copied. Selecting a folder in this list shows the contents of that folder on the right side of the window, along with file information.

In addition to basic filters, which are similar to those described in the other packages, PowerMerge allows the user to individually set which folders and files will move. These settings are remembered from session to session and provide a great deal of flexibility.

The status of each file and folder is indicated graphically and can be changed by double-clicking on it in the list.

PowerMerge has a good strategy for avoiding file collisions: Potential collisions are specially marked, and you can cycle through them automat-



Inline Sync displays which disks are being updated in the upper left, as well as a directory tree indicating which folders and files will be modified when the Sync Now button is clicked. The legend at lower left explains the symbols used in the tree.

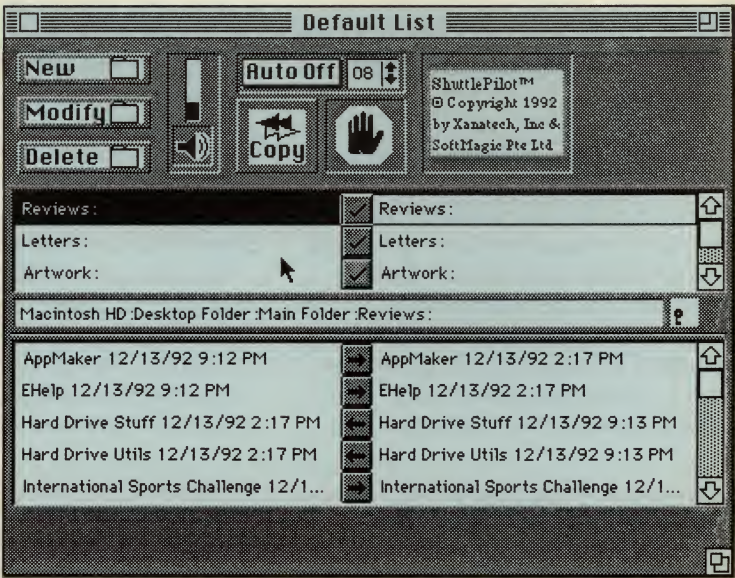
ically by repeatedly clicking on the Collision icon. You can then either prevent the move of marked files or jump to the desktop and manually copy the older file out of the way.

PowerMerge can be set to keep a text log of synchronization activity for a single event, a day or in a cumulative record.

PowerMerge includes a good manual, integrated help and a useful HyperCard stack tutorial.

Matching those disks. Inline Sync from Inline Design is geared to synchronize entire disks. Instead of using a separate settings file for each folder pair, Inline Sync stores setting information for pairs of mounted volumes, which are any fixed or removable disks that appear on the desktop.

Selecting a specific disk pair for the first time creates a settings file that is stored in the program itself. Options to automatically tie together any or all files also are available.



The cockpit of Xanatech's ShuttlePilot lists the files that will be synchronized. Arrows next to each name indicate in which direction the files will move.

A display showing the disk pair, several available options and a directory of one of the disk's contents then is shown in the main window. The file list is almost identical to that used in the System 7 desktop. Information about file linkage and movement also is displayed along the left side of the directory list.

You can run synchronization either manually or at scheduled intervals. Scheduled synchronization is controlled by the Inline Sync extension, which the program installs automatically when you select an automatic synchronization. The schedules are very flexible and can be set to occur at a set time

or after a specific amount of inactivity in the system.

Several configuration options are available that range from default display parameters to what to do with files that have been modified on both machines.

A rather unique part of Inline Sync is its included scripting language. While this is beyond the needs of most users, it is a nice alternative. The manual does a good job of explaining the basics of the script language and, in general, how to use the rest of the program.

Inline Sync also has built-in recognition for different time zones on the same network,

See Sync, next page

SYSTEM 7 COMPATIBILITY				
	Inline Sync	PowerMerge	ShuttlePilot	Update!
Balloon help	Yes	Yes	Yes	Yes
TrueType	n/a	n/a	n/a	n/a
Publish and subscribe	n/a	n/a	n/a	n/a
Apple events	Yes	Yes	Yes	Yes
32-bit addressing*	Yes	Yes	Yes	Yes

*According to vendor.

printer- and font-configuration information from networked PostScript printers — another feature now found in many similar network-administration products.

Browsing. Once profiles have been retrieved from clients and printers, you can quickly browse through STATUS*Mac's database by selecting the nodes you wish to examine. Information is presented based on the different categories of information scanned, but you can modify these displays to remove or add additional information.

New to STATUS*Mac 3.0 is a charting function that displays network-configuration statistics in bar graphs. This feature is useful to display a quick glimpse of the distribution of installed RAM, system-software versions or machine types within your domain.

Browsing is the best way to quickly refer to information stored in your database, but it currently lacks query or filtering capabilities. To query your database or view filtered information, you must use STATUS*Mac's reporting feature.

STATUS*Mac comes with more than 80 predefined reports to help you get the product up and running quickly.

Templates and Suites. Reports are based on templates. ON provides more than 80 custom templates with STATUS*Mac. These templates are helpful for such things as software or extension conflict resolution, planning software or hardware upgrades, or performing software license audits. The Suites feature processes groups of templates sequentially. You create Suites simply by copying the desired report templates into a single folder. ON has referred to its application as one that not only gathers and spews information but also can impart additional information as an aid to the task of asset management. You can store comments in the heading of any report. When viewing the template you can suppress this commentary, if

System Files Not in Use						
This report lists all inactive system files on all machines. Useful for identifying system files that are unused, duplicated, or deactivated by an extension/INIT manager. Unless there is a reason to keep them, inactive system files should be deleted.						
Profile Name (Prof Mgmt)	File Name (Sgs)	File Type (Sgs)	Creator (Sgs)	Version (Sgs)	Special Directory (Sgs)	
1 Beaver@Servers@BFC	AppleShare.PDS	BTFL	pds	7.0		B
2 Beaver@Servers@BFC	GraceLAN Responder	cddev	ELCd	2.1		B
3 Beaver@Servers@BFC	GraceLAN Responder	cddev	ELCd	2.1		B
4 Gretchen McCaffrey	DJIMacPassword	cddev	mpCd	3.8.9		M
5 Gretchen McCaffrey	1StartupSndInit1.4	INIT	Snd	N/A		M
6 Gretchen McCaffrey	2ShutdownSndInit	INIT	Snd	N/A		M
7 Gretchen McCaffrey	ADSP	INIT	MACS	1.5.1		M
8 Gretchen McCaffrey	AppleShare Prep	afpp	afps	N/A		S
9 Gretchen McCaffrey	Backgrounder	ZSYS	MACS	1.3		M
10 Gretchen McCaffrey	ChooserUser 1.2	cddev	CHSR	1.2		M
11 Gretchen McCaffrey	GraceLAN Responder	cddev	ELCd	2.1		B

you wish to view more data, but it is a useful tool for framing the context of the information that is being displayed.

Package distribution. STATUS*Mac's distribution capabilities are significantly weaker than its competitors, but the features that have been omitted are counter to the "unintrusive at all costs" objectives of the product. Any file available to the network administrator's Mac can be distributed to any of the workstations managed by STATUS*Mac. Files can be directed toward the desktop, anywhere within the System folder, or you can prompt users for installation at their discretion. STATUS*Mac will not allow you to remove any files from a client's

workstation, nor will it allow you to specify any minimum requirements for the nodes to which you are distributing packages. STATUS*Mac is completely ignorant to Apple Installer scripts. Distributing more than 10 files in any given package can become tedious.

Management considerations. As products such as Apple's AppleTalk Remote Access (ARA) blur the demarcation between networked and nonnetworked Macs, network administration often has some wide-area aspects. The current version of STATUS*Mac does not support ARA. That is, you cannot use ARA to connect to another multizoned network because STATUS*Mac does not recognize any zones other than the one in which the ARA server is situated. We feel that this is a problem that Pharos and ON must resolve, especially if STATUS*Mac is to be deployed throughout an organization with multiple, nonnetworked locations.

Conclusions. STATUS*Mac is based on a certain philosophy of network administration. This approach is prevalent throughout

the many features of this product. If you subscribe to this method of network administration — the unintrusive approach — for which STATUS*Mac is designed, then you will be very happy with this product. If, however, you would like to have some additional, control-oriented features, you should consider one of the other products mentioned. STATUS*Mac's reporting features, most notably its ease of use, are unequaled among the other network-administration products. In this vein, it can be used as an effective planning and asset-management tool.

ON Technology Inc. is at 155 Second St., Cambridge, Mass. 02141. Phone (617) 876-0900 or (800) 548-8871; fax (617) 876-0391. □

SYSTEM 7 COMPATIBILITY	
STATUS*Mac 3.0	
Balloon help	Yes
TrueType	Yes
Publish and subscribe	No
Apple events	No
32-bit addressing*	Yes

*According to vendor.

Sync

From previous page

useful for those who work in different parts of the world.

Shuttling files. ShuttlePilot from Xanatech takes a different approach to synchronization than the other products reviewed here. Instead of matching directory trees, or even entire disks, it just matches the files found in each of the folder pairs listed within the current configuration file. Although any number of folder pairs can be selected, this must be done explicitly. ShuttlePilot then stores the identification numbers for each

folder so they will remain connected even if one or both are renamed.

While this is a lot of extra trouble and can take a while to set up large tree structures, it prevents folders that were accidentally dropped into the transfer folder from being automatically copied over during a synchronization. Xanatech plans to add support for nested folders in a future release.

The main screen is laid out vertically according to function. Different option controls are placed along the top, and a list of matching folders takes up the middle third, with a check mark between those pairs that need synchronization. The bottom of the window contains a

list of the files that will be moved from the currently selected directory, showing the direction of the move. Clicking on this direction indicator initiates the transfer.

As with PowerMerge, ShuttlePilot specially marks files that have changed in both folders, but ShuttlePilot prompts you for explicit instructions on how to proceed, something lacking in the other packages.

ShuttlePilot's automatic capabilities are limited to performing synchronization when a removable disk containing one or more of the folders in the list is inserted. After a preset number of beeps, it performs the synchronization and ejects the disk when it is com-

plete. You can set the maximum size of a removable disk to prevent ShuttlePilot from trying to eject hard disks by mistake, which is another odd feature in the program.

ShuttlePilot automatically warns you about files in the selected folders that have "unreasonable" dates, such as dates before the introduction of the Macintosh. The manual explains the basic functionality of the program and includes a quick-start section.

Conclusions. File synchronization certainly has a way to go until it can be quietly ignored in the background. Each package covered here does a reasonable job, but the process itself can be difficult and somewhat tedious, and none of the publishers has quite covered all of the potential pitfalls. Even with some safeguards, automatic synchronization risks causing major havoc if not handled properly.

Inline Sync manages to pull slightly ahead of the pack with its wide range of features and support for both interactive and background synchronization. PowerMerge comes a close second. Its automated features are relatively limited, but its interface packs a lot of information in a limited amount of space.

Update! is a good low-end choice for those who require only basic functionality.

ShuttlePilot, meanwhile, needs work. Explicitly choosing each folder pair can be cumbersome, although its warning feature for files modified on both machines is useful when manually synchronizing.

The package you choose will depend largely on how often you intend to use it and how much flexibility and control you need. □

Norton's differences

Symantec Corp.'s \$129 Norton Essentials for PowerBook includes a file-synchronization component — SyncIt! — as one of its many features.

Though NEP is designed as a grab bag of enhancements for the PowerBooks, its synchronization capabilities are quite strong. (See MacWEEK, Jan. 4, for a detailed review of NEP.)

Setting up a synchronization operation with SyncIt! is as simple as selecting a folder to synchronize and selecting New Set under the SyncIt! menu (which NEP adds to the menu bar). A user-defined key combination also can initiate this sequence. After selecting the other folder, SyncIt! starts synchronization and adds the synchronization sequence to the SyncIt! menu for future use.

By default, SyncIt! synchronizes the entire directory tree, but it also can be set to synchronize only files within matched folders. The process also can automatically expand files compressed with Fifth Generation Systems Inc.'s AutoDoubler or Aladdin Systems Inc.'s SpaceSaver, although the default setting is to leave files compressed.

SyncIt! presents a file list before files are actu-

ally copied, although this safeguard can be omitted. SyncIt! also can automatically copy both hidden and aliased files.

The program handles file collisions (where both files have changed since the last synchronization) in one of two ways. It can automatically copy newer files over older ones, or you can set the program to prompt you on what to do for each collision. The collision dialog gives detailed information about both files, and either one can be selected to move or both can be left unchanged.

Symantec provides a range of filters that determine which files should not be moved during synchronization. These include modification date, whether the file is an application and which application created the file.

SyncIt! lacks the more powerful scripting and automatic execution capabilities of some of the stand-alone synchronization packages. Its file-listing capabilities also are fairly basic, displaying only the files to be moved and not the tree structure displayed by Inline Design's Inline Sync and Leader Technologies Inc.'s PowerMerge. Despite this simplicity, you can change file transfer direction and remove

items from the list of files to be transferred.

The NEP package has a few features not offered by its competitors, and for basic synchronization needs, the program works quite well. It also should be noted that you do not need to own a PowerBook to use NEP's synchronization features: If you install the program on a desktop Mac, the Installer will place only the SyncIt! portion of NEP on your hard drive. — By R. Bradley Andrews



Norton Essentials for PowerBook's SyncIt! window gives detailed information about each file that will be updated. Despite the simplicity of this display, SyncIt! is a very capable synchronization application that adds to the overall value of NEP.

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Product Info

INLINE DESIGN

Inline Sync 1.0: \$129

308 Main St., Lakeville, Conn. 06039-1204
Phone (203) 435-4995; fax (203) 435-1091

LEADER TECHNOLOGIES INC.

PowerMerge 1.01: \$129

4590 MacArthur Blvd., Suite 550, Newport Beach, Calif. 92660
Phone (714) 757-1787 or (800) 922-1787;
fax (714) 752-5960

NO HANDS SOFTWARE

Magnet 1.0: \$129.95

200 Page Mill Road, Suite 260, Palo Alto, Calif. 94306
Phone (415) 321-7340; fax (415) 321-2209

QDEA

Update! 1.1: \$49

P.O. Box 19531, St. Paul, Minn. 55119
Phone (800) 933-3558

SYMANTEC CORP.

Norton Essentials for PowerBook 1.0: \$129

10201 Torre Ave., Cupertino, Calif. 95014
Phone (408) 253-9600 or (800) 441-7234;
fax (408) 252-4694

XANATECH INC.

ShuttlePilot 1.01: \$98.88

(\$59 until Jan. 31)

61 Oriole Crescent M/S 10

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Phone (505) 265-6563 (after Jan. 31)

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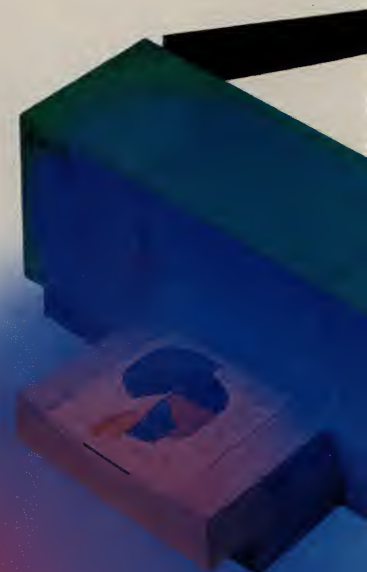
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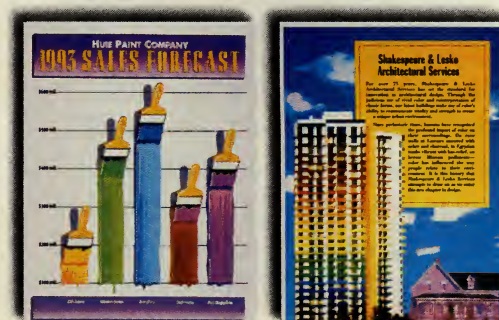
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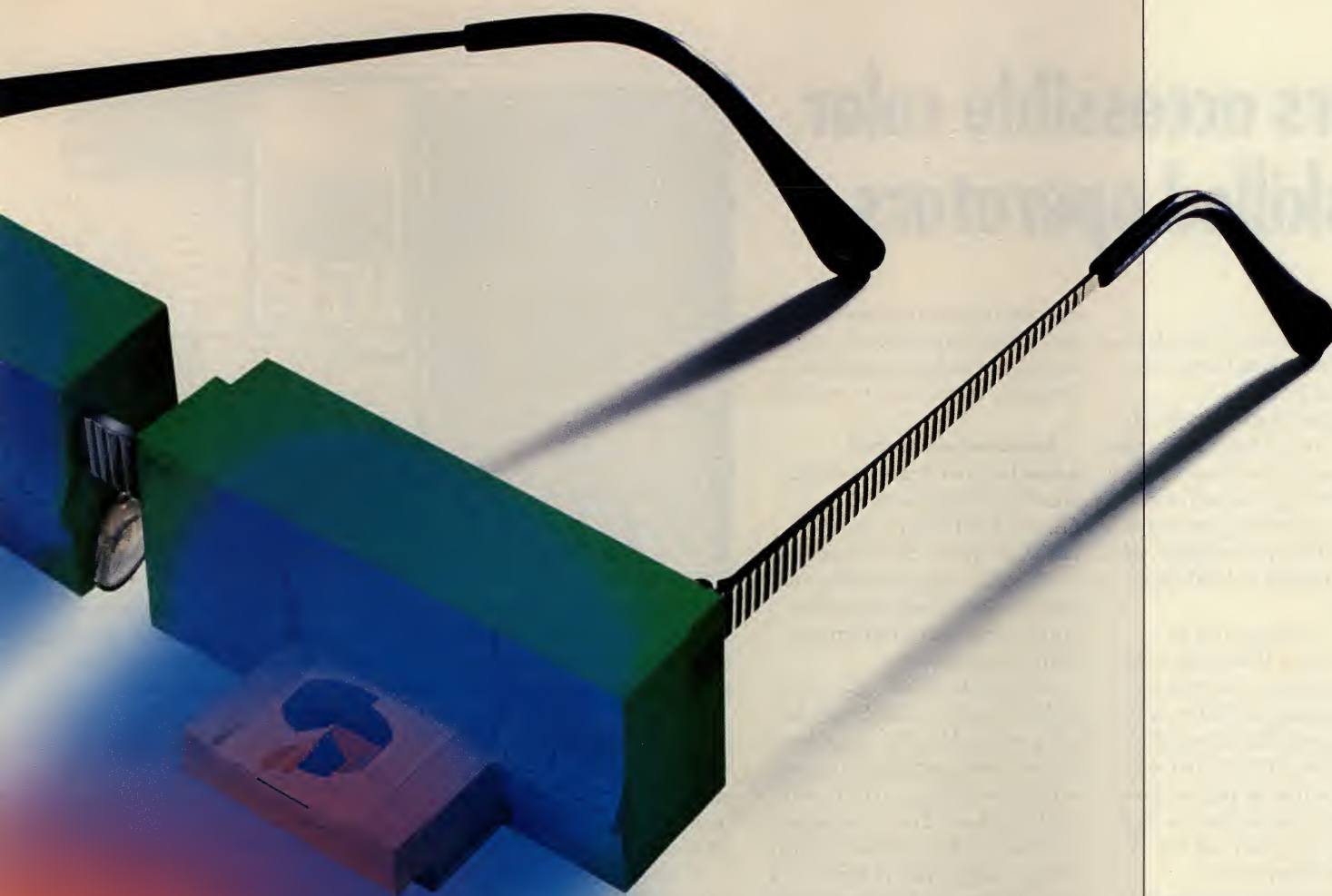


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**HEWLETT
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PixelCraft offers accessible color to experts, unskilled operators

For converting RGB images to high-quality CMYK, ColorAccess is a well-thought-out solution.

By Bruce Fraser

ColorAccess from PixelCraft Inc. (formerly Barneyscan Corp.) was a sleeper hit of 1992.

It's designed to do one task: take RGB (red, green, blue) images from a scanner and prepare them for print, performing tone and cast correction, sharpening, and conversion to CMYK (cyan, magenta, yellow, black) quickly and with excellent quality.

At \$695, it's designed as an adjunct to Adobe Photoshop rather than a replacement; ColorAccess has no retouching tools of its own, and it opens only Photoshop files — not TIFF or PICT. In our testing we found that the product produces better color separations than Photoshop, faster and with less intervention from the user.

Rather than entering the brave new world of color-management systems and device-independent color, ColorAccess relies on tried-and-true algorithmic conversions tuned for particular paper-and-ink combinations. Its default settings give good results, but its advanced options mimic the kinds of controls found on drum scanners, and it offers the skilled user fine control over all aspects of preparing the image for print. It also offers a batch-processing mode for unattended operation, so it can achieve high productivity as well as high quality.

ColorAccess was originally bundled with Barneyscan's CIS 4520 scanner. The unbundled version, currently at Version 1.3.3, has several enhancements. The annoying dongle-based copy-protection has been dropped, the unsharp masking

algorithm has been improved to give the user more control, black generation has been enhanced, and batch-processing features have been added.

Standard advanced experts. ColorAccess has three operating levels: Standard, Advanced and Expert, the latter two of which also can be password-protected. In Standard mode, a relatively unskilled user can process images using predefined settings from pop-up menus.

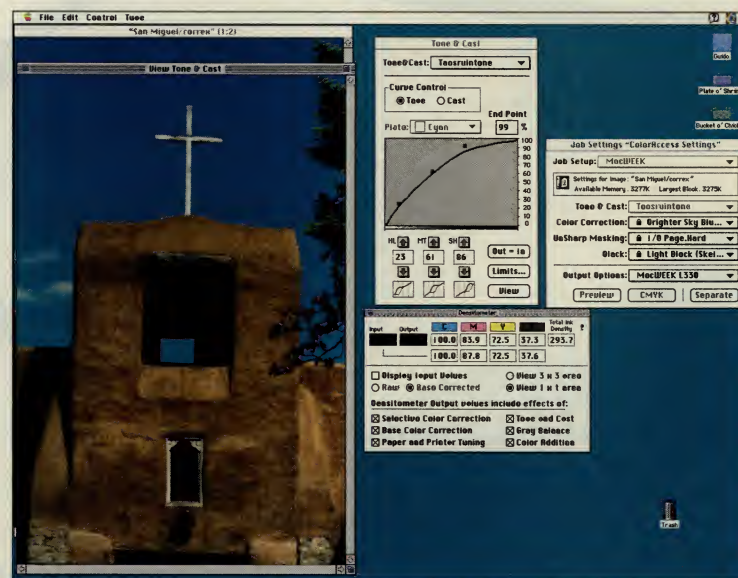
Advanced users have full access to the Tone, Cast, Selective Color and Unsharp Masking controls and can build settings that then appear in the pop-up menus. The Expert level allows use of the Tune menu, which lets sophisticated users build dot-gain compensation curves for a particular press, ink absorption and base pigment compensation curves for specific paper stocks, and base color and gray balance correction tables for specific inks.

Right in tune. Correct use of the Tune menu settings requires rigorous calibration using a densitometer on actual print runs; casual experimentation with these tools is likely to wreck the print job. But they allow color trade shops to optimize separations for their particular production process. The resulting settings can be built into pop-up menus, which are then accessible at the Standard and Advanced levels.

For those who lack the facilities or the expertise to perform such rigorous calibration, the vendor-supplied defaults work well. This structured approach means that one expert operator can create settings for an entire shop, so less-skilled personnel can do most of the work yet still reap excellent results.

Working in color. To work with ColorAccess, you open an image and apply the correct settings in a Job Settings file. Users of Barneyscan scanners or of Sharp Electronics Corp.'s JX-600 or Microtek Lab Inc.'s Scanmaker scanners can scan images directly into ColorAccess via the QuickScan module. Otherwise, ColorAccess opens Photoshop RGB files.

Lack of support for RGB PICT or TIFF may seem a shortcoming, but we suspect that in practice the majority of people who scan color images on the Mac do so into Photoshop. ColorAccess creates a subsam-



The Job Settings window lets novice users apply and preview preset corrections from pop-up menus. In the Advanced and Expert modes, users have access to all the controls and can create new settings (the Tone & Cast control window is shown here). The on-screen densitometer provides precise readings of what the program is doing to the color data.

pled preview of the image and applies the changes dictated by the settings file only when you actually create separations. As a result, the RAM requirements are relatively modest — the default memory allocation is 4 Mbytes.

At the Standard level, all you have to do is open the image, choose the appropriate settings (an on-screen densitometer provides an accurate reading of the CMYK values that result) and click the Separate button. ColorAccess then generates CMYK separations as either five-file Encapsulated PostScript Desktop Color Separation, single-file EPS or CMYK TIFF. This leaves the original RGB data unchanged.

The program can save separations as a background process, and the Mac can start working on scanning or correcting another image while the separations are being created.

The program doesn't try to give WYSIWYG color: The screen provides a rough idea of the result, but the densitometer is the main tool for evaluating the effects of the various settings. This is consistent with ColorAccess' emphasis on print: Monitors always display in RGB, and they're incapable, for example, of showing the kinds of subtle changes that result from different amounts of UCR (undercolor removal). The densitometer, on the other hand, shows exactly what the program is doing to the image data. One particularly useful feature is the ability to lock the densitometer on a particular area of the image and watch what happens as you choose different settings.

At the Standard level, you can't create new settings: You must rely on either the defaults or on settings created by others using the Advanced or Expert levels. But the default settings give a range of tools that will be sufficient for many purposes. The only setting that must

be adjusted is for Output Options, and this is accessible at the Standard level. You need the correct PostScript Printer Description for your imagesetter, and you must set the line screen, the paper type, the press type and the inks to be used.

In addition, you can have ColorAccess resample the image when it creates separations; this can be particularly useful when you want to reuse the same scan at several different sizes.

At the Advanced level, the user has control over tone and cast, selective color correction, unsharp masking, and black generation. The controls follow the sequence traditionally used in pre-press: First you adjust the tone and remove any global color cast, then add selective color correction if necessary, and finally select the appropriate amount of sharpening.

Adjusting the tone curve is possibly the most important operation in getting good color separations. Transparencies typically have about double the printable density range, so the trick is in deciding where to compress the density range, and this varies from image to image. Some images may depend on accurate reproduction of shadow detail but allow compromises with the highlights, while others may require exactly the reverse.

All-star cast. ColorAccess' Tone & Cast window lets you adjust the shadow, midtone and highlight points for overall tone. The control points aren't the same as the quarter-point controls on a traditional scanner; rather, they've been positioned to give the maximum amount of control over the tone curve. When you adjust one of the control points, the others also change to maintain a smooth tone curve, which is vital to good tone

See ColorAccess, Page 72

score card

ColorAccess

PixelCraft Inc. (formerly Barneyscan Corp.)

Overall value ♦♦♦♦ Version tested: 1.3.3 List price: \$695*

ColorAccess from PixelCraft is dedicated to taking scanned RGB (red, green, blue) images and rendering them suitable for high-quality four-color printing by performing tone compression, color correction, unsharp masking and conversion to CMYK (cyan, magenta, yellow, black). It relies on tried-and-true pre-press techniques and offers controls very similar to those found on traditional drum scanners. But while ColorAccess has much to offer the expert, its powerful scripting and batch-processing features allow relatively unskilled operators using relatively low-powered Macs to attain high levels of productivity. ColorAccess complements rather than replaces Adobe Photoshop. For the grunt work of converting RGB images to high-quality CMYK separations, it offers a well-thought-out solution.

Performance ♦♦♦♦♦

Ease of use ♦♦♦♦♦

Features ♦♦♦♦♦

Documentation/support ♦♦♦♦♦

*Upgrades from Version 1.0, \$195; less for upgrades from more-recent versions.

Kai's Power Tools energizes Photoshop with 33 image-manipulation filters

Gradient Designer, Texture Explorer top list of powerful special-effects and surface generators from HSC Software.

By Ben Long

Kai Krause's tips for Adobe Photoshop users have made him an on-line cult figure. America Online features a special forum devoted to his teachings, and the rock band Yes has used his Photoshop art on its album covers.

HSC Software, a start-up company featuring Krause and a band of talented mathematician-hackers, has released a \$99 utility disk called Kai's Power Tools (KPT). What's contained in this humble package (all documentation is supplied in a two-page text file on the disk and in on-line help) is a series of 33 of the most original and useful image-manipulation tools available.

To install the filters, you copy all of them into your Plug-Ins folder in Photoshop, the image-editing program from Adobe Systems Inc. When you launch Photoshop, the KPT tools are added to the Filters menu.

The two most important tools in this set are KPT Texture Explorer and KPT Gradient Designer, both of which let you create airbrushing and painting effects from baroque to sublime, without painting a single stroke.

Explorations. All of the KPT filters require you to make a selection before you choose an effect or they are applied to the entire image. Once an area is selected, you open Texture Explorer by selecting it from the KPT submenu. What appears is an anything-but-standard modal window with a 3-D interface featuring a "gene tree" of buttons and a ring of textures arranged around a central texture. There is also a pull-down menu that lets you select from a huge list of predefined textures ranging from various Woods, Marbles and Metals to outrageous Animalia, Fire and more.

These textures are mathematically defined using many variables, and they are resolution-independent (as are all of the filters in this set). You can apply them to an image of any size or resolution with predictable appearance and no jaggies or degradation in quality.

Because of this hodgepodge of variables, however, it would be virtually impossible for a non-mathematician to edit the textures if it weren't for the unique interface: The higher you select buttons on the gene tree, the greater the "mutation" — or deviation from

the selected texture — that occurs in the texture ring. The selected texture remains unchanged until you choose it, but every time you click on the tree, a new batch of mutants appears in the ring. Click low on the tree and the variations from the central image are subtle, click high in the branches and the changes are extreme. Clicking on the Color button leaves the pattern intact but creates a ring of mutants with new colors. Clicking on one of the textures in the ring moves it to the middle position. This interface lets you start with a known texture (by selecting one from the menu) and explore myriad possibilities, until you find one you like.

Once you've settled on a texture, you can apply it to the selection. An Options menu lets you apply the surface in a 96-pixel-square grid or stretched to fit the selection. If you apply textures in a grid, they are seamless.

One of our complaints with the Texture Explorer is that the grid is an arbitrary size, and it produces vastly different results depending on the resolution of the image. We would like to be able to specify the tile's dimensions. Our other complaint is that there's no way to specify a direction for textures such as wood grain. To get this effect, you'll have to copy your selection to a new document, rotate it, apply the texture, rotate it back, then recopy it into your original document.

Despite a few quibbles, the Texture Explorer provides a limitless wealth of surfaces. Like all of the special effects in the KPT set, once you create an effect you like, you can save it in the Textures menu for future use.

Outstanding blending.

While Photoshop's Blend tool limits you to a starting and ending color and direction, in circular or linear styles, KPT Gradient Designer completely redefines gradients. Not only can you create your own gradients with smooth or hard transitions between up to 512 colors, but KPT's unique color picker, which puts both Apple's and Adobe's color pickers to shame, includes the color None. This allows you to include transparency as one of the elements of your gradient. In addition, gradients can be applied linearly; concentrically in a rectangle or circle; or radially, like the sweep of a clock hand. You



Using KPT Texture Explorer's texture ring (right) and the gene tree (left), you navigate through and mutate textures that can be applied either seamlessly to your selection in a 96-pixel-square grid or stretched to fit the selected area. Textures you identify can be added to the menu (bottom) that comes with a wide array of presets.



The KPT Gradient Designer lets you build gradients with up to 512 colors. You can specify round, rectangular, radial or linear styles, and set the start and end points and direction. The unique color picker includes a checkered picker that lets you use transparency as a color.

specify the direction and whether the gradient should be applied top to bottom, bottom to top, inside out or outside in.

This combination of capabilities allows you to create unique effects in a small fraction of the time required with Photoshop's native tools.

Einstein and the color Some.

Within the Gradient Designer is where power users will discover the utility of the filter's Expert button (disguised behind the icon of Albert Einstein). If you click this button, a dialog box asks for an access code. HSC will provide this code for \$39, at which point you have access to a new set of features in Gradient Designer's toolbox.

Most notably, a transparency palette is added to the color palette. Now, instead of choosing None as a color in a gradient, you can use the Eyedropper to select Some — from transparent to opaque. A display indicates color percentages picked up by the Eyedropper. There is also a pop-up menu in Expert mode that lets you set the color spectrum for the KPT color picker, which will limit you to

using CMYK (cyan, magenta, yellow, black) printable colors or a range of your own choosing.

More bang. There are 31 other tools in the KPT set, though none is as powerful as the Texture Explorer and Gradient Designer:

► **KPT Gradient on Paths.** You use this tool by defining a path and feathering it with Photoshop's feather tool, then applying a gradient from the KPT Gradients menu. The gradient is applied perpendicular to the path, along its length. This tool uses two separate gradients: one for color, another for transparency, so you can create effects such as glowing neon tubes, banded halos and planetary rings — all using the same color gradient. This tool will become much more powerful when Photoshop 2.5 ships this winter with the ability to use open paths.

► **Mandelbrot Explorer and Julia Set Explorers I, II and III.** These navigators let you create an infinite variety of backgrounds and textures from organically rich mathematical models.

See KPT, next page

score card

Kai's Power Tools

HSC Software

Version tested: 1.0

List price: \$99*

Overall value ♦♦♦♦

KPT is more than just a set of 33 add-on filters to Adobe Photoshop 2.0. It is a powerful set of special-effects and surface generators that reside within Photoshop's Filters menu. The most important of these effects are the Gradient Designer and Texture Explorer. Gradient Designer lets you create smooth gradients containing up to 512 colors (including transparency). These gradients can be applied linearly (you set the direction) or as concentric rectangular or circular frames, or swept around a point. The Texture Explorer is like an infinite catalog of seamless textures that you can mutate to suit your design needs. Many other tools round out the special effects in unique ways. The interface to the KPT tools contains the best color picker we've seen and is very powerful. Almost any Photoshop user should find KPT a very good value.

Performance ♦♦♦♦
Features ♦♦♦♦♦
Ease of use ♦♦♦♦♦
Documentation/support ♦♦♦♦

*Expert set is available for an additional \$39.

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72

Reviews

MACWEEK 01.11.93

ColorAccess

From Page 70

compression — sudden unnatural tone shifts are almost certain to wreck an image.

You also can set a limit for the shadow dot by typing a value in the End Point field. This is a good way to control total ink density, a necessity on most four-color web offset presses.

The Cast controls require more caution in their use. They allow you to separately adjust the tone curve for cyan, magenta and yellow to remove color casts. ColorAccess doesn't have automatic cast control, so this feature is definitely only for the knowledgeable user, but in the right hands it's extremely powerful.

The Selective Color controls provide tools for correcting a specific color in the image without affecting others. ColorAccess divides the colors that can be corrected into six bands: greens, yellows, reds, magentas, blues and cyans. You then choose which plate's ink will be used to make the compensation.

Look unsharp. ColorAccess' Unsharp Masking (USM) is also noteworthy. Too much USM causes spurious texturing in flat areas, so ColorAccess' USM includes a smoothing function as well as a sharpening function. It features three controls: Threshold, Sharpness and Smoothing.

The Threshold setting controls which edges will be sharpened. At a low setting, only the most obvious edges are sharpened, while higher settings apply sharpening to subtler edges. The Sharpness setting dictates the amount of sharpening applied.

The Smoothing setting applies smoothing to flat areas that show grain or other undesirable artifacts. The Smoothing function is linked to the Threshold setting, so areas that have been identified as edges aren't smoothed.

You can apply the USM controls to all colors equally, or individually to each plate. The latter option is useful in areas with one particularly strong color, where it's often desirable to reduce the sharpness. For example, in a face shot of a model wearing lipstick, you may want to reduce the sharpening or the threshold on the magenta plate. The hair and eyelashes would receive more sharpening than the lips, since the lips contain more magenta.

Black generation. Black generation is a necessary evil in pre-press, and experts differ on how best to accomplish it. ColorAccess offers several default settings for black generation, ranging from a light or skeleton black to

the full black required by older letterpresses, but it also offers the expert user full control over both the black curve and the amount of UCR. Unless you really know what you're doing, the manual suggests you leave these controls alone, and we concur.

Batch processing. Because ColorAccess works on subsampled preview images and applies the changes only when you actually create the separations, it's quite speedy.

However, actually creating the separations takes a while, particularly on a less-powerful Mac. But you can open images quickly, apply job settings to them and add them to a queue for batch export. This makes it possible to use ColorAccess on relatively low-powered Macs since you can queue up a number of jobs and set them to separate overnight. This lets you free up the RAM-laden Quadras for operations that really need all the power available, such as retouching and compositing.

Conclusions. ColorAccess is aimed at the production environment rather than the casual user, but even a relatively unskilled operator can be quickly brought up to speed.

The program does a much better job of gamut compression than Photoshop, particularly with strong reds, which tend to get blown out by Photoshop. Because it works on subsampled images and uses scripted settings, it's also much more productive than applications that insist on working with full-resolution images.

If you've been struggling with color separations from the Mac and are dissatisfied with either the quality or the throughput you're getting now, ColorAccess is well worth a look, particularly for those who are more familiar with traditional pre-press than computers.

PixelCraft Inc. is at 130 Doolittle Drive, San Leandro, Calif. 94577. Phone (510) 562-2480 or (800) 933-0330; fax (510) 562-6451. □

SYSTEM 7 COMPATIBILITY

ColorAccess 1.3.3

Balloon help*	Yes
TrueType	n/a
Publish and subscribe	No
Apple events	No
32-bit addressing**	Yes

*Menus only.

**According to vendor.

KPT

From previous page

► Glass Lens. This option turns the current selection into a bright-, medium- or soft-rendered hemisphere that actually uses 3-D ray tracing. You use numbers on the numeric key pad to specify the light direction.

► Sharpen Intensity. This filter is an easy way to make images pop off the page.

► Pixel weather. Pixel Breeze, Pixel Wind and Pixel Storm explode pixels into various levels of noisiness.

There are several other filters not listed here that offer a variety of special effects.

Documentation for all of the KPT filters is provided via on-line help and the text file on the disk. It is generally very

good, although specific effects are left to the user's discovery.

Conclusions. Kai's Power Tools is an unorthodox approach to image manipulation. HSC Software could easily have made it a stand-alone special-effects application, but that would have made it less convenient to use. As a set of Photoshop plug-ins, the powerful KPT interface blends well into the depths of the Filters menu structure. Anyone who creates original artwork with Photoshop should invest the \$99 for KPT and the extra \$39 for access to the Expert tools. These filters will quickly pay for themselves in creative and productive power.

HSC Software is at 1661 Lincoln Blvd., Suite 101, Santa Monica, Calif. 90404. Phone (310) 392-8441; fax (310) 392-6015. □

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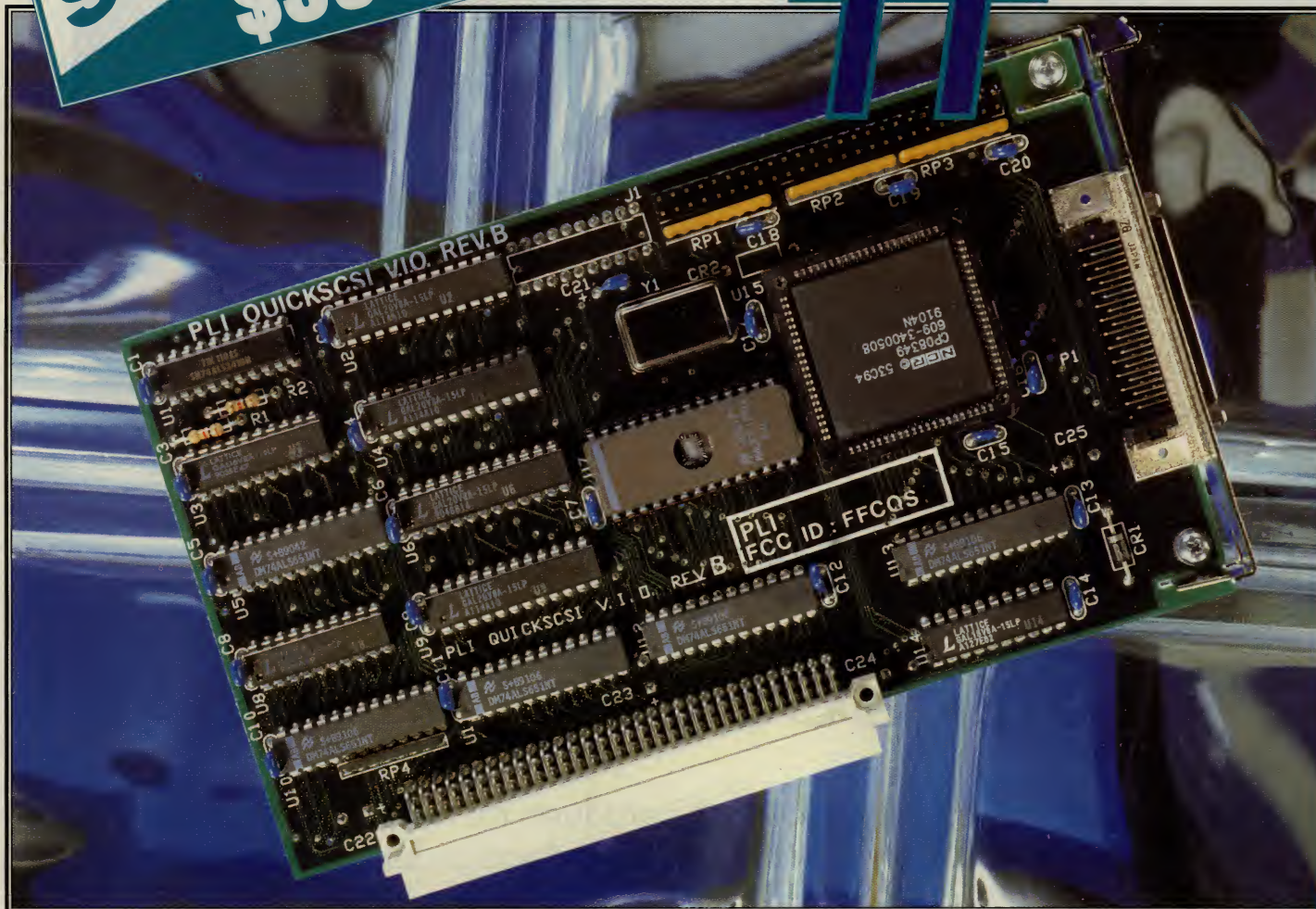
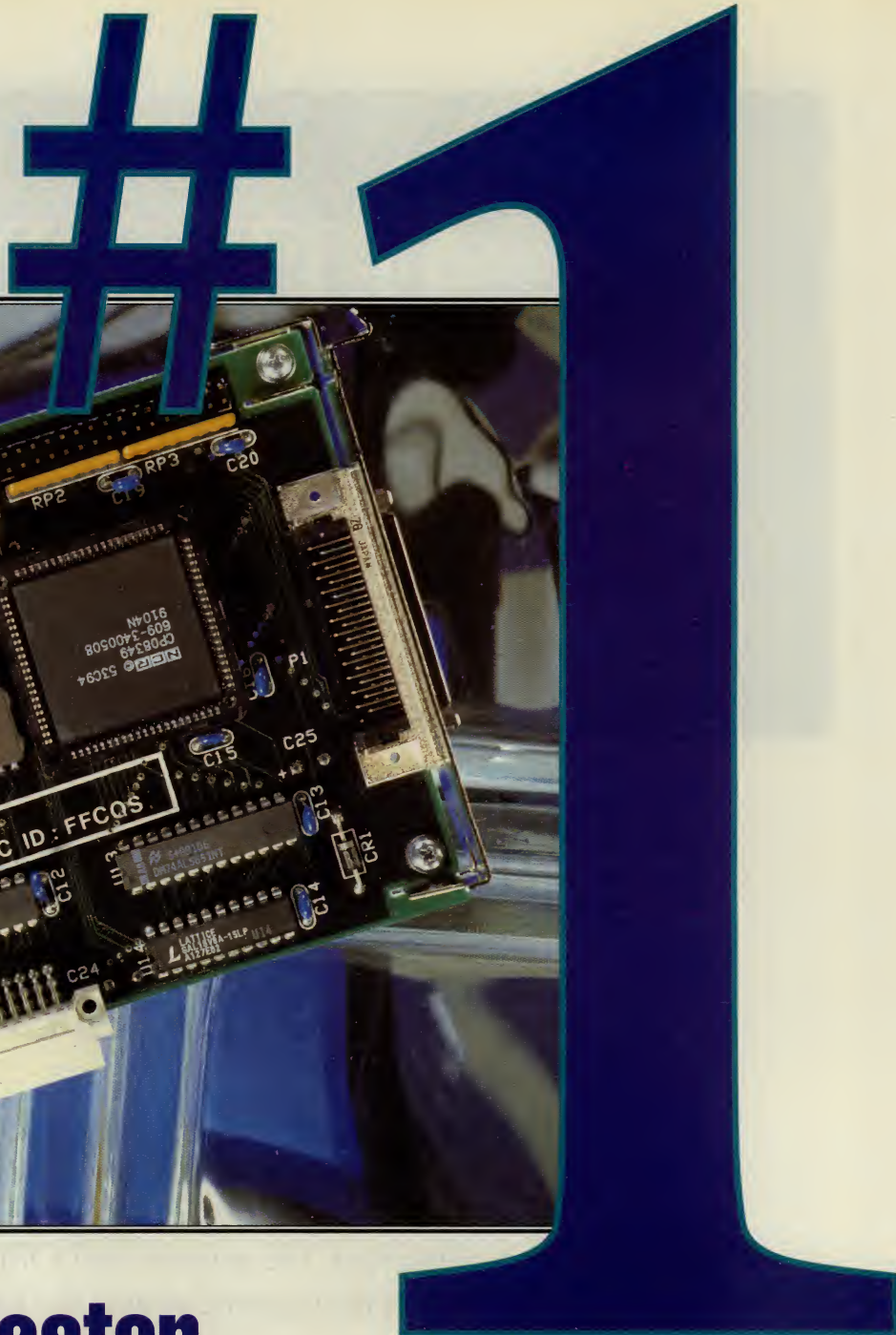
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App file size and type determines server options

The kinds of documents you access from a server can be the most important factor in choosing the right Mac CPU and peripherals.

By Jonathan A. Oski

Choosing the right Mac to use as an AppleShare server is not as cut and dried as you might think. There are a variety of applications for Macs running AppleShare, ranging from simple file sharing among a small workgroup to storing multi-user databases for 50 or more users.

For peak performance, you can buy a top-of-the-line Mac such as a Quadra 950, but you may be spending a lot of money for incremental performance gains over a lesser model. On the other hand, you may find that a server getting you by just fine for workgroup file sharing is brought to its knees when you place a multi-user database file on it.

Ultimately, the way you intend to use an AppleShare server plays a significant role in determining which Mac is best-suited for your company's needs.

How the server works. To understand the roles that the CPU and various other components play in an AppleShare server, it is useful to examine the tasks the server is asked to perform.

In a basic sense, the server fields a request for information stored on one of its disks — whether an entire file or a portion of data within a file. This request may arrive via LocalTalk, Ethernet or token ring, depending on the network interface of the server.

When the AppleShare application receives the request, it must determine where the requested data is stored, fetch the data, address it and send it back over the network to the node from which the request came.

This simple example helps to illustrate a data path for a common task performed by an AppleShare server. Potential bottlenecks can be found throughout this example, beginning with the network interface, to the internal bus the data must follow once it is "inside" the Mac, to the 680x0 CPU, memory, processor and/or disk cache(s), disk interface and disk platter.

The expandability, or lack thereof, found in the different models of the Mac allows you to address these bottlenecks with such things as CPU accelerators,

adding memory or disk interfaces.

Richard Pearson, integrated technologies director at Computers Unlimited, a computer consultation company in London, said, "Generally, you can throw as much processing power at an AppleShare server as you like, but you won't get much improvement if the task of file sharing isn't very processor-intensive."

For example, Pearson said he performed some limited comparisons and found an 8 percent to 10 percent improvement in file-sharing performance when using a Quadra over an equally configured IIci.

A range of options. One of the attractions of AppleShare is its scalability, which lets users run it on everything from a Mac Plus to a Quadra 950. Many people find that a Mac Plus, running AppleShare, is quite capable of meeting the simple file-sharing needs of a small workgroup. At the other end of the spectrum, a Quadra 950 packed with RAM, fast SCSI adapters and disks can be shared by 50 or more users.

The expansion capabilities of the individual platforms are another area worth some attention. While compact Macs, such as the Classic line, provide an economical entry point for running AppleShare, they have little, if any, expansion capabilities.

To ensure some longevity in your selection of a CPU, experts recommend that you consider a CPU's ability to add more memory (for disk caching), CPU accelerators, a processor cache, fast network interfaces (such as Ethernet or token ring) and storage interfaces (such as SCSI-2 adapters).

A compact Mac such as a Plus, Classic II or SE/30 attached to LocalTalk and coupled with a large, fast disk can provide a suitable warehouse for files that are shared among small to midsize workgroups.

Moving up the ladder to an Ethernet or token-ring network attached to Mac II-class machines such as the IIx, IIci and IIvx, you can suitably share a database application among a limited number of users or offer more-robust file-



SCOTT CAMPBELL

sharing services to a group of 15 to 25 users.

Topping the file-server scale is a Mac Quadra using disk arrays and its fast Ethernet interface, where you reach the limits of AppleShare's abilities at about 50 or so concurrent file-sharing clients.

Dissent in the ranks. Despite its broad popularity, there are people who think that dedicating a Mac as an AppleShare server is a waste of money. In many instances, managers have turned to other AFP (AppleTalk Filing Protocol) implementations. See CPUs, Page 78

VGA monitors on Mac servers

An unused VGA display sitting around can be a cost-effective monitor for your file server.

By Charles Rubin

Apple's color monitors are some of the crispest displays around, but if your Macintosh is tucked away as a network file server you may want to trade some crispness for cash. Depending on the Mac you're using, you could save a lot of money by marrying it with a VGA display.

Until a couple of months ago, Apple's least-expensive color monitor was the 13-inch AppleColor High-Resolution RGB Monitor, which retailed at \$999. But even though Apple's new 14-inch Macintosh Color Display retails for \$599, you still can buy a standard or Super VGA monitor for less.

If you already have an unused VGA display sitting around the office, you can avoid buying another monitor entirely, and even if you do buy a VGA model, you can spend about what you would for an Apple display and get one that can work with either a Macintosh or an IBM PC or compatible.

Success in using VGA displays with a Mac isn't ensured, however.

Mac models vary in their ability to produce VGA-compatible video signals, and you'll need to find an adapter to plug a VGA monitor cable into your Mac's video port.

Using VGA monitors. Although most Macs can create VGA-standard 640-by-480-pixel images, making a VGA-compatible monitor work with your Mac is more than a matter of image size.

For full compatibility, the VGA monitor and Macintosh must be able to match vertical and horizontal scanning rates, video-synchronization signals, and connector-pin configurations.

The least-expensive VGA monitors have scan rates fixed at 60 Hz vertical and 31.5 kHz horizontal. These fixed-scan or single-frequency monitors come bundled with many PC clone systems and can be had separately for as little as \$200.

However, all Macintosh systems built before the Mac LC and Quadra came out (including the NuBus video adapter cards for Mac See VGA, Page 78

Avoiding logistical pitfalls when setting up file servers

Here are some tips to get you started in piecing together all the elements for your system.

By Robert Hess

It's clear your office has reached the point where a file server is vital. So you figure you'll take the SE acting as a doorstop, plug a LocalTalk box into it, install System 7, turn on file sharing and be set, right?

What about those 1.2-Mbyte pictures your assistant has been placing in the company newsletter? And that database the planning committee wants to access all at once? Don't forget the spreadsheet the finance department modified at least 15 times yesterday, or the new department you'll be adding to the network later this year. ...

The hardest part of setting up a file server is preparing for your users' needs now and in the future. You don't want to be forced to make major changes down the line, when people have made the server an integral part of their work.

For the sake of simplicity, we'll assume you need a file server to give your users a place to store and exchange small to moderate-size files, nothing much more than a megabyte or two. Other types of servers, such as image servers, print servers and database servers, have their own specific performance needs unlike those we'll discuss here.

The brains in the family.

The first decision to make is the file-serving software and CPU on which your server will run. Besides Apple's AppleShare Server software, there are several third-party solutions such as SunSelect's MacTOPS and Novell Inc.'s DataClub.

For that matter, a Mac CPU is not your only processor alternative. Novell will be glad to set you up with a high-speed NetWare for Macintosh server running on an IBM PC or compatible, and Helios USA's EtherShare software can do the same on a workstation from Sun Microsystems Inc.

Even if you decide to purchase a Mac to run AppleShare, the type of Mac you buy will be determined by several factors. The most obvious is the number of people who will need access to the server.

Generally, as the number of users logged onto a server increases, the performance of the server decreases, and the more performance you need, the more money you're likely to have to spend.

Network requirements.

While this seems to be the easiest

question to answer, it can have hidden complications. One rule of thumb is to use LocalTalk if you're patient or have a very small workgroup, Ethernet if you're a large workgroup, or faster technologies if you really need blistering speed.

Most people would agree few companies need the CPU horsepower of a Quadra for their file server. On the other hand, the Quadra has built-in Ethernet that Apple claims is faster than Ethernet NuBus cards and other solutions.

Also, if your server is an SE/30 and already has a card installed, adding Ethernet will probably require the use of a SCSI-based Ethernet adapter, resulting in slower network performance, compared with NuBus solutions.

Server location. The physical location of your server and network is vitally important and an area frequently ignored. Ultimately, it's best to keep your network simple, locate people close to the services they'll need most and maintain a network free of interference from outside sources such as electrical and radio-frequency interference.

According to experts, keeping network cables away from lighting and shortening cable runs as much as possible will improve both server performance and reliability.

"I've had much better luck speeding things up by moving devices around and changing working procedures than any sort of hardware change on the AppleShare server," said Barry Bowden, systems production manager at Webco Printing Inc., an Atlanta-based printing house.

According to Bowden, users who are forced to access a server located across a bridge or router will see reduced performance compared with those located "next to" the server.

Brent Pearson, European information technologies manager of Booz Allen & Hamilton, agreed. "I have found that increasing the network efficiency by increasing bandwidth, decreasing zone hops and managing network congestion can have a significantly greater effect on 'perceived' file-server performance than upgrading the CPU model," Pearson said.

Server storage. Depending on your company's main application for the server, storage can be a much more important issue than

Typical file-server conventions

MODEL	NETWORK	NO. OF USERS	APPLICATION
SE or Classic	LocalTalk	1 to 5	Light file sharing or CD-ROM
II or LC II	LocalTalk	1 to 10	Light to moderate file sharing
SE/30	LocalTalk	5 to 20	Moderate to heavy sharing of large documents (< 500 KBs)
IIci	LocalTalk	5 to 25	Moderate to heavy sharing of large documents (< 500 KBs)
SE/30	Ethernet	10 to 30	Moderate to heavy file sharing of larger documents (> 500 KBs) or retrieving applications from the server
IIci or Quadra 700	15 to 50 users	15 to 50	Moderate to heavy file sharing of larger documents (> 500 KBs) or launching applications from the server
Quadra 950	Ethernet	30 to 75	Heavy file sharing and/or launching applications from the server

networking or CPU speed. Your first inclination might be to buy the "fastest" hard disk available, but the manner in which a hard disk is used determines its relative speed more than raw specifications.

The two important specs to keep in mind when shopping for a server's hard disk are access times and throughput. Access time is the average time it takes for the hard disk to locate and begin reading the data you've asked it to acquire, while throughput is the rate at which data can be transmitted to the CPU once it has been located.

Generally file servers cause the hard disk to bound from place to place, grabbing this file for one user and that file for another. For that reason, a typical file server benefits most from hard disks with low access times.

However, if the files on your file server are going to be large, such as large color pre-press or multimedia documents, seek times become less important than data throughput because the hard disk spends most of its time handing data to the CPU, not looking for the next file.

Once again, the Quadra is attractive to those needing high data throughput, as its SCSI ports are capable of far higher data transfer rates when used with compatible drives.

Security and other considerations.

If data security is an issue for you, then another important concern is the server setup. Many people are troubled over the ease with which someone can sit down at your AppleShare 3.0 server and gain access to it. Apple is clearly not oblivious to this, as evidenced by the Apple Desktop Bus lockout to the Quadas.

Most experts recommend that you follow Apple's advice on file security: Keep your server locked up in a room with limited access.

You also should make sure the room in which your server resides

has good ventilation and temperature control. Any Mac on-line and active constantly should be in a cool, dry room; a Quadra with several hard disks inside should be in a room you wouldn't enter without a coat.

Don't forget to include a reliable backup system in your budget, a mandatory requirement for any file-server system. Losing data on one user's Mac is bad enough; losing data on the Mac relied on by the entire organization can be catastrophic.

Several options are possible, from Dantz Development Corp.'s Retrospect Remote to manual file copying in the Finder each night, but you should decide on a method and use it religiously.

One way to save money is to set up a "headless server," or one without a monitor. Since a well-managed server should rarely need administrator intervention, a monitor is wasted much of the time.

By installing screen-sharing software such as Farallon Computing Inc.'s Timbuktu or Microcom Inc.'s Carbon Copy, you can manage the server from a remote location on those few occasions when something goes wrong. A switch box even can be installed, allowing multiple Macs to share a single monitor. VGA monitors with Mac adapters also are a cost-effective way to reduce server cost (see story, previous page).

Keeping the server's hard disk defragmented also will benefit performance. Manual tools such as Symantec Corp.'s Speed Disk and automated tools such as ALSoft Inc.'s DiskExpress II keep files together on your hard disk, increasing the speed at which they can be read.

While setting up the right file server for your company will take some effort, a bit of planning with an eye to the future should result in a file server that doesn't require constant attention. □

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VGA

From Page 75

II series models) deliver video at 66 Hz vertical by 35 kHz horizontal — the rate required by the 13-inch AppleColor RGB monitor. Some Mac II models support other, specific scan rates to support other Apple monitors, but these rates aren't VGA-compatible either.

If your file server is a Mac Quadra, IIfx, IIfx or Performa model, you probably can use it with any VGA-compatible monitor if you have the right adapter. These models can deliver a range of scan rates, depending on the video connector used. The pin configuration of the video connector you plug

Depending on the Mac you're using, you could save a lot of money by marrying it with a VGA display.

into your Mac determines the scan rates it sends out to a monitor.

If you're shopping for a fixed-scan VGA monitor, look for a Super VGA model because these have a finer screen dot pitch, which produces sharper images. A 28-dot pitch is common on Super VGA displays, vs. the standard 0.40 pitch on VGA monitors.

Mac-compatible VGA monitors. Because the Mac IIsi, IIfx, IIfx and other pre-Quadra Macs output Mac-standard video, the VGA monitor must be a multi-sync model that can adjust to the Mac's standard horizontal and vertical scanning rates, as well as to the type of video synchronization signal the Mac sends out.

VGA monitors use a "separate" synchronization signal that separates the signals for red, blue and green, which are delivered through different pins of the monitor connector.

All pre-Quadra Macs, on the other hand, use only a "composite" synchronization signal that delivers all three signals on one connector pin. However, the Quadas, the LC and newer models can support either separate or composite sync.

To be fully compatible with a pre-Quadra Mac, therefore, a monitor must support the composite-sync method, and that means multisync.

Some of the multisync models available include NEC Technologies Inc.'s MultiSync 3FGx and 4FG, Nanao USA Corp.'s Flexscan 9065S, Sony Computer Peripheral Products Co.'s CPD-1304S, Mitsubishi Electronics America's Diamond Pro 14, Taxan

Corp.'s MultiVision 795, and Panasonic's Panasync C1395.

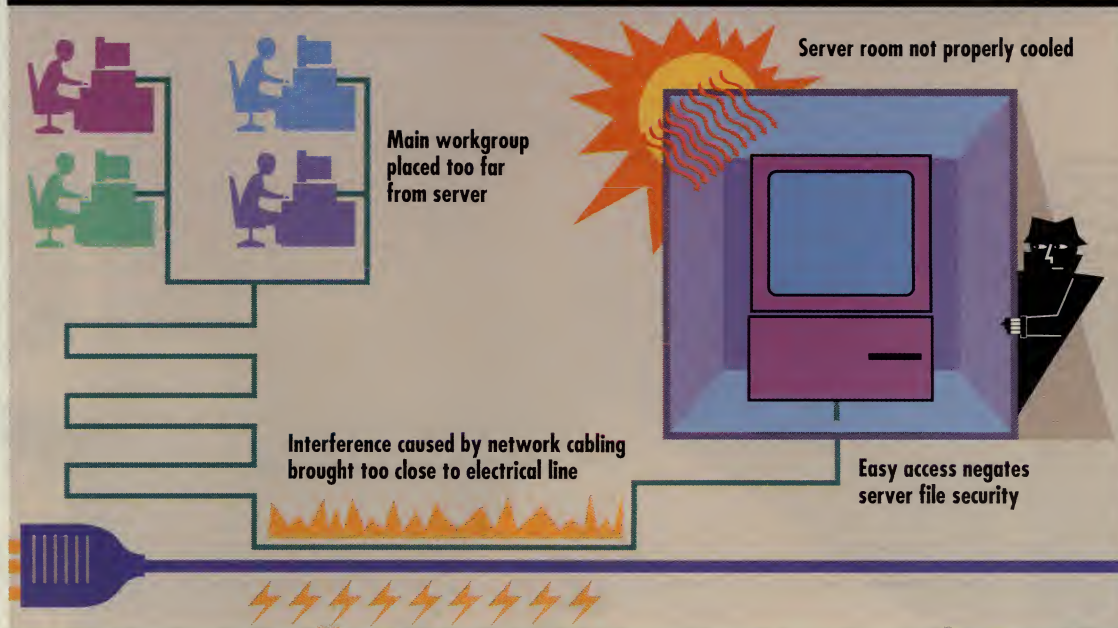
Unless you already own a multi-sync monitor, however, you won't save much money (if any) buying one of these instead of Apple's 14-inch display. The above models have list prices ranging from \$799 to more than \$1,000, with street prices about 30 percent lower. However, if you buy one of these displays, it will work with any color Mac or PC in your office.

Making the connection.

Once you've found a VGA monitor that can live with your Mac's video capabilities, you need the right adapter to connect them. The 15-pin VGA connector has three rows, while the 15-pin Mac video connector has two rows. Along with adapting one connector type to the other, the video adapter's pin configuration tells the Mac which type of video signal to send out. On a Quadra, for example, the VGA adapter tells the Mac to send out a separate-sync signal instead of a composite-sync signal.

If you're buying a Mac-compatible VGA monitor, the monitor's manufacturer should have the right adapter. Some makers throw in the adapter for free, while others charge up to \$65 for one, depending on the monitor model you buy. It's important to find exactly the adapter that works with your monitor; one size does not fit all.

If you already own the VGA monitor and you need only an adapter, you can contact either the

Four things to avoid when setting up a file server

manufacturer or a third party. However, supplying Mac adapters isn't exactly a high priority for most VGA monitor makers, so check to make sure that the adapter you need is not indefinitely back-ordered.

If your monitor company can't help you, James Engineering Inc. offers Mac-to-VGA adapters for various monitors. You can buy James' MacVGA adapter as a kit (including parts and instructions) for \$15 or assembled for \$25 through the BMUG user group.

James Engineering also sells the MacVGA along with other adapters (\$25 each, assembled) for VGA and multisync monitors that won't work with the MacVGA. □

CPUs

From Page 75

mentations to meet their high-end requirements.

"As a consultant, I would never advise a client to run AppleShare," said Len MacDonnell, a networking consultant based in Santa Cruz, Calif. MacDonnell said that higher performance and more-economical solutions, such as Novell Inc.'s NetWare and Helios USA's EtherShare, offer more value for the money than AppleShare running on a Quadra 950.

According to experts, while these alternative solutions cannot compete with AppleShare on some of

the lower-priced Mac CPUs, they can offer much more functionality and scalability for those businesses with critical file-server performance requirements.

Going forward. AppleShare, as a Macintosh-based solution, certainly will continue to be a viable player in the AFP server market — especially for Mac-centric sites. Apple's next-generation server product should find its way to market in the not-too-distant future as well.

Presumably, this also will be a Mac-based product, but it will require significantly more horsepower than AppleShare 3.0. □

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GORDON STUDER

MacInTouch RIC FORD

Finder 7 fault may fool you with flipped files

A little design glitch in Finder 7 runs counter to the Mac philosophy and may create confusion among the unwary. Here is how it works, plus other tips.

BUGS & TIPS

As Apple stretches further and further in its efforts to keep pace with change, the original Macintosh architecture is being placed under new strains.

A tiny fault introduced with Finder 7 causes problems only in obscure circumstances, but it lies in a fundamental part of the interface where such surprises have never appeared.

The situation is common: A Mac is configured neatly with System 7. Several applications are running, and an open window on the desktop shows some documents, sorted by date. The person at the keyboard is editing a document on the hard disk.

The job is not quite done, but it's time to go home and she has a train to catch, so she decides she'll have

to finish it on her home machine. She saves the changes, then switches to the Finder and hurriedly drags the top item — assuming that is the most recent file since the window is sorted by date — from the open window to a floppy.

But when she gets home, she finds that the file she copied is not the unfinished one, but another she'd been working on earlier. What is going on?

Finder time. Well, the Finder fibbed. Finder 7, apparently for performance reasons, does not always bother to update an open window on the desktop with a file's true modification status.

When you view by date, the top file in a window may or may not be the most recently modified. At its whim, the Finder may leave an

older file at the top of the list for quite a while.

If you close the window and reopen it, the Finder updates the list promptly. If you do not close the window, though, you may encounter similar confusion when you try to replace another file with the same name in a different folder.

Let's assume that you are dragging a newer file into a folder that holds an older version of that same file.

In its confirmation dialog, the Finder may tell you the truth, or it may claim that the older file is newer, or it may imply that the two files are the same. It all depends on timing and on your desktop windows. What you see is not necessarily what you get.

Filling cracks. Of course this is just a little item that somehow fell through the cracks, and you can work around it easily once you know what is happening. But, philosophically speaking, this interface behavior contradicts fundamental Mac principles. Chapter 1 of Apple's "Human Interface Guidelines: The Apple Desktop Interface," argues that the user interface must be consistent and predictable.

In this case, the desktop is neither, but rather deceptive.

This is not a problem that is likely to get a high priority at Apple, but it is precisely the kind of detail that the company should be sweating over as it struggles to maintain the Macintosh identity in an ever more competitive market.

Plugging into Photo CD.

Adobe Systems Inc., which several months ago posted and then withdrew a Photoshop plug-in module for capturing images from Eastman Kodak Co.'s Photo CDs, has released a debugged version.

Photo CD Acquire 1.1 is available from Adobe's forum on CompuServe at GO CIS:ADOBE. The file, named PSPCD.SEA, is in Library 16.

Although it is not a serious problem, I found an apparent incompatibility between the plug-in module and Apple's new Apple Photo Access software. With Apple Photo Access installed, the plug-in could not locate files on a Photo CD. However, you can open Photo CD files as PICTs from Photoshop instead.

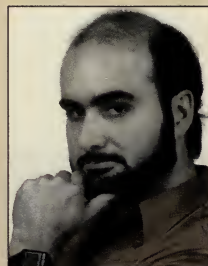
Point of view. The current version of Apple Photo Access shows all photographs in landscape orientation. If a photograph was taken vertically, it appears rotated when you open it as a PICT in an application such as TeachText or Picture Compressor.

Photoshop and similar applications can correct the rotation, and Kodak's Photo CD Access software (see MacWEEK, Oct. 26, 1992)

Ask David Ramsey

PowerPC: Worth the wait?

Q. What do you think, David? Should my company go ahead and buy Quadras for our high-end needs or wait for the PowerPC Macs? Will these RISC-based Macs really run our existing software?



A. I thought only individuals ran into this "buy now or wait for the next cool machine" problem.

The conventional wisdom on the subject says that PowerPC Macs won't be available for at least a year. And, although it's rare in the computer industry, there's the possibility the introduction date could, well, slip a little.

Software compatibility remains unknown. According to Apple, the first PowerPC Macs will run a new version of the Mac operating system and PowerOpen, a Unix variant, which may offer Mac OS emulation like A/UX does today. Of course, there will be the compatibility problems, but we won't know how significant these are until the machines have been out for a while.

My advice remains the same as it has for years: If you need something now, buy it now; the extra work you get done between now and the introduction of the whizzy new hardware should more than compensate for the extra capabilities of the new iron.

Q. Does the PowerPC chip really have an EIEIO machine instruction?

A. Yes. It stands for Enforce In-Order Execution of I/O; the instruction is used to synchronize I/O across parallel processes.

Q. Did the engineers work to come up with an instruction that could be expressed as EIEIO or was it a coincidence?

A. The former.

Q. I think I've found a bug in System 7.0.1. Can I report it to Apple?

A. Apple maintains an electronic-mail address for bug reports from the field. Although it's really intended for developers, anyone can use it. The address is APPLE.BUGS on AppleLink, which works out to APPLE.BUGS@applelink.apple.com from the Internet or >INTERNET:APPLE.BUGS@applelink.apple.com from CompuServe or ZiffNet.

Please send questions to David Ramsey on CompuServe: 76702,335 or to Ask David Ramsey, c/o MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105.

opens images in the correct orientation, as long as the original processing specified it correctly.

Cable tips. Reader Buzz Hays sent a tip by electronic mail after I wrote about using S-video cables to replace standard Macintosh keyboard cables (see MacWEEK, Dec. 14, 1992).

It turns out that Apple's keyboard cable joins the connector shells at the two ends electrically, but many

S-video cables do not. Buzz had trouble getting S-video cables to work with Mac keyboards, although I have used some successfully whose shells were not connected.

Another problem is variation in the dimensions of the cable plugs. Some have ends that are too fat to fit all keyboards (or even all video equipment). Watch also for cables whose pins are recessed farther than usual, making it difficult to get proper contact with the sockets. □



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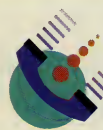
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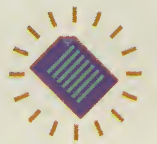
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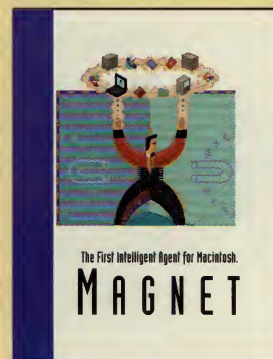


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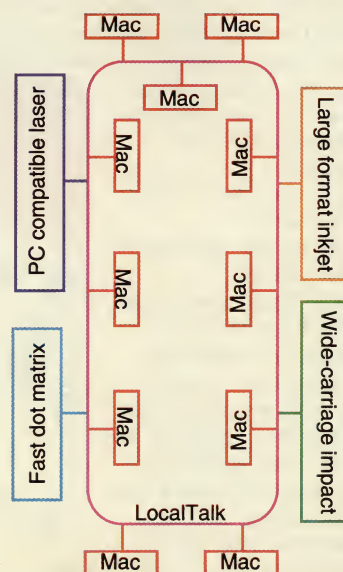
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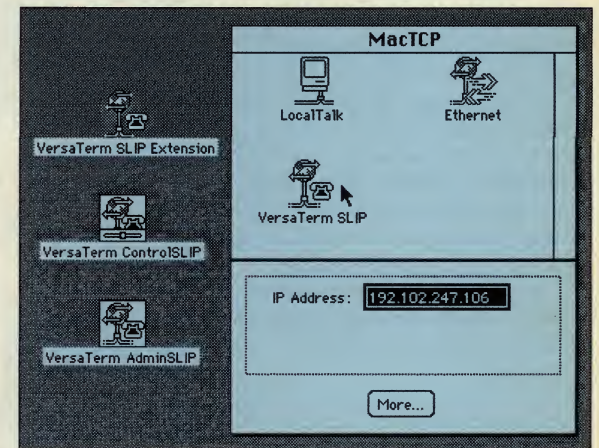
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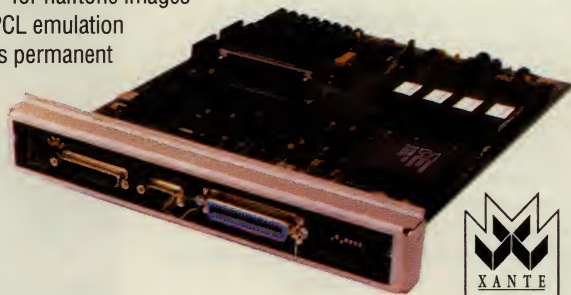
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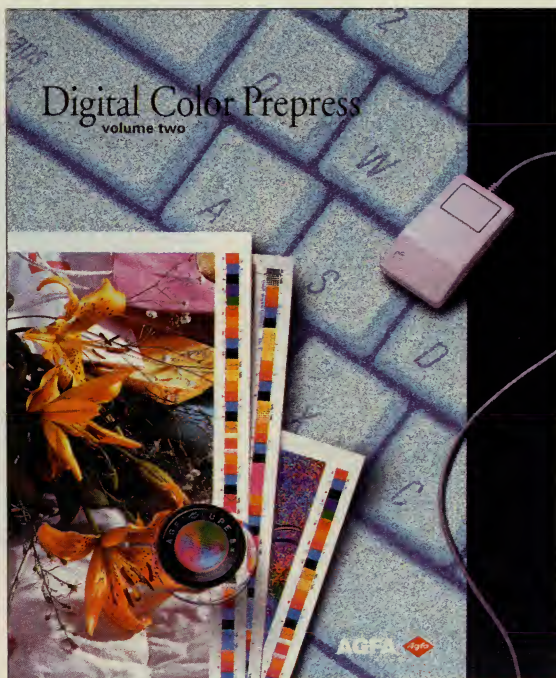
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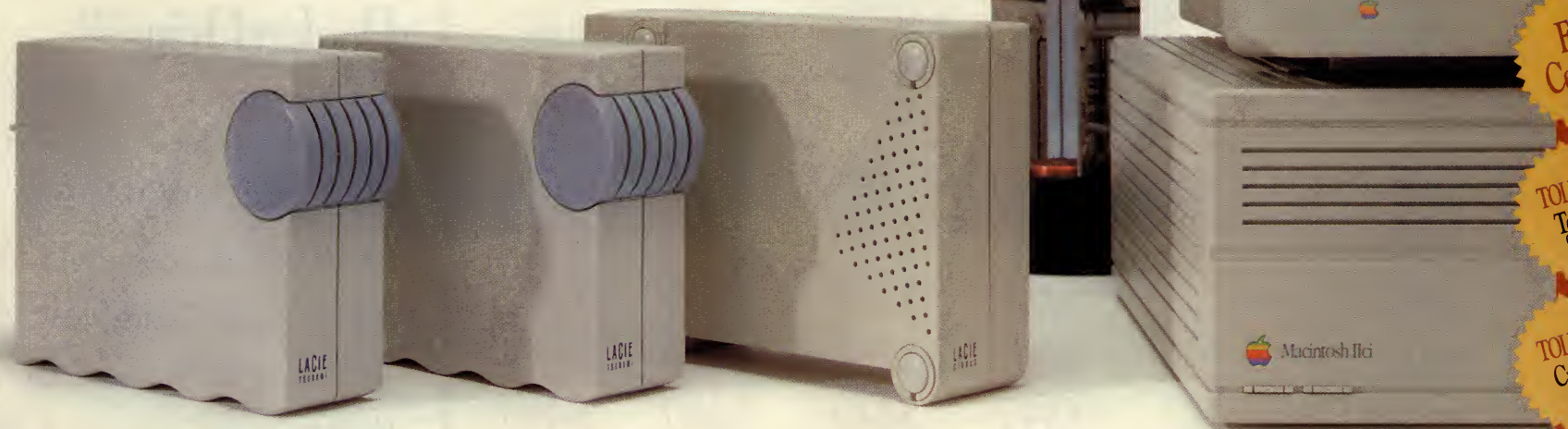
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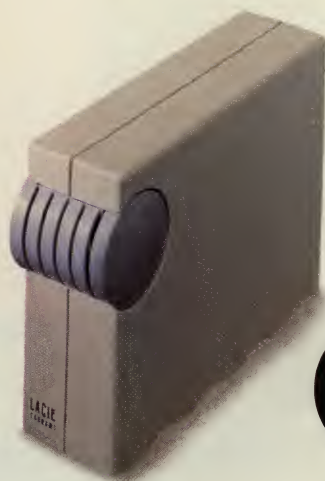
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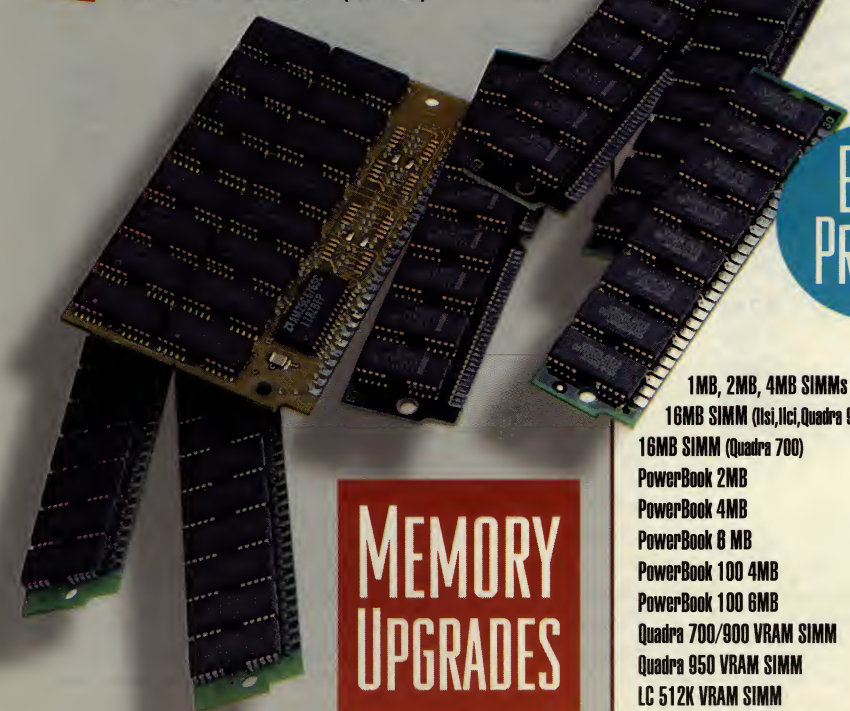
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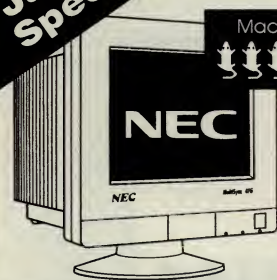
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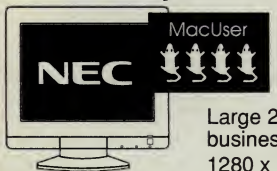


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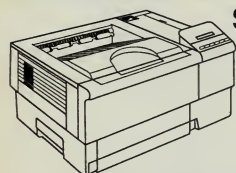
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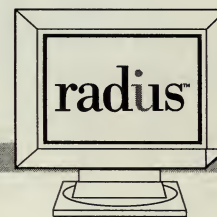
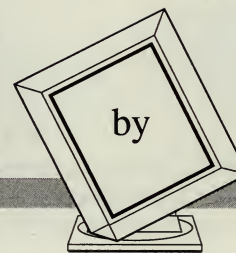
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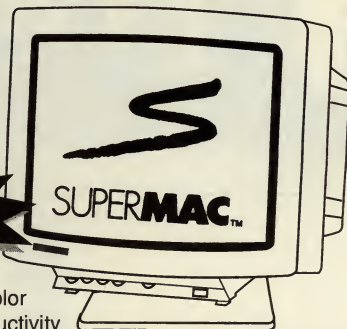
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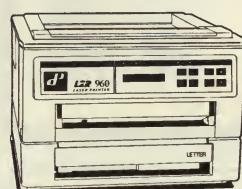
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Drives only mount in
Mac II, IIfx, IIfx,
Quadra 900 & 950

NEW Low Prices

MPC TAPE BACKUP DRIVES

ARDAT

Model	External
4.0gb - 8.0gb HC	\$1399
2.0gb	\$1199
90m / 60m SONY Tape	\$25 / \$19

TEAC

Model	External
600mb Tape Backup Drive	\$699
150mb Tape Backup Drive	\$499
600mb / 150mb Tape Cassette	\$29 / \$19

*All tape backup drives come bundled with FREE
Retrospect V.1.3,
one tape and have a one year warranty

MPC OPTICAL DRIVES

TEAC

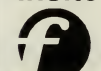
Model	Speed	Size	External
128mb	45ms	3.5"HH	\$1049

RICOH

Model	Speed	Size	External
650mb	28ms	5.25"FH	\$2599
128mb	45ms	3.5"HH	\$1249

*All MO drives come with FWB HDT software, One MO
cartridge and have ONE year warranty

Insite



Model	External
21mb Floptical	\$299
3M Cartridge	\$25

*All Floptical drives come with FWD HDT software,
one 3M cartridge and have a ONE year warranty

TOSHIBA

Unformatted Capacity	Speed	Size	Internal	External
830mb	12.5ms	3.5"HH	\$1199	\$1299
1.2gb	12.5ms	3.5"HH	\$1499	\$1599
		CD-ROM		
600mb	325ms	3.5"HH	\$479	\$519

Toshiba carries a FIVE year Warranty on drives
and a ONE year Warranty on CD-Roms.

Maxtor®

Unformatted Capacity	Speed	Size	Internal	External
120mb	15ms	3.5"TH	\$289	\$349
213mb	15ms	3.5"TH	\$439	\$499
330mb	15ms	3.5"HH	\$659	\$719
535 mb	12ms	3.5"HH	\$979	\$1039
1.2gb	13ms	5.25"FH	\$1449	\$1549
1.7gb	13ms	5.25"FH	\$1749	\$1849

Maxtor carries a ONE year Warranty on 3.5" Drives and
TWO Years on 5.25" Drives

FUJITSU

Unformatted Capacity	Speed	Size	Internal	External
425mb	9ms	3.5"HH	\$899	\$959
520mb	9ms	3.5"HH	\$999	\$1069
1.2gb	15ms	5.25"FH	\$1549	\$1649
2.0gb	15ms	5.25"FH	\$2649	\$2749

Fujitsu carries a FIVE year Warranty.

CONNER

"An Apple Authorized Brand"

Unformatted Capacity	Speed	Size	Internal	External
85mb	17ms	3.5"HH	\$229	\$289
120mb	19ms	3.5"HH	\$289	\$349
170mb	13ms	3.5"HH	\$329	\$389
212mb	12ms	3.5"HH	\$439	\$499
540mb	12ms	3.5"HH	\$1079	\$1139

Conner carries a ONE year Warranty.

We also feature these fine brands: radius SUPERMAC E-MACHINES Dataproducts TEXAS INSTRUMENTS UMAX ASANTÉ TEAC Ikegami RasterOps SONY QMS MICROTEK DAYSTAR NEC RICOH hp HEWLETT PACKARD



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Powerbook 145 4/40 - 4/80
\$2099 / \$2479



Powerbook 180 4/80 - 4/120
\$4099 / \$4449



Duo 210 4/80
\$2199



Duo 230 4/80 - 4/120
\$2599 / \$2949

International (714) 693-5450
24 Hour FAX (714) 693-2955

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Sat 10:00AM - 2:00PM -PST

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1x8/2x8/4x8/16x8 @ 80ns	\$32/\$61/\$119/\$549
Quadra 700/950	
4x8/16x8	\$119/\$549
Powerbook 160/180	
4mb/6mb/8mb/10mb	\$199/\$299/\$399/\$499
Duo 210/230	
4mb/8mb	\$299/\$549
Powerbook 100/140/170	
2mb/4mb/6mb	\$99/\$199/\$249



TurboPS/400P	\$1695
TurboPS/880	
w/ Ethernet	\$3395
TurboPS/440B	\$3295
TurboPS/660B	
w/o Ethernet	\$3795
TurboPS/660B	
w/ Ethernet	\$4295

TEXAS INSTRUMENTS

TI MicroLaser PS-17 w/AppleTalk™	\$1249
TI MicroLaser PS-35 w/AppleTalk™	\$1349
TI MicroLaser Turbo w/AppleTalk™	\$1649
1mb Upgrade (PS-17 / PS-35)/Toner	\$49/\$49

radius™

VideoVision Color Interface	\$1949
PrecisionColor 24XP Interface	\$489
PrecisionColor 24XK Interface	\$819
PrecisionColor Display/20s	\$2399
PowerView for PowerBooks	\$499
PrecisionColor Pivot 15" < New >	\$949
Rockets 25i / 33	\$1199/\$1949
RocketShare < New >	\$499
SCSI-2 Booster < New >	\$249



Dataproducts.

LZR 960 printer (9ppm, 2mb @ 300dpi)	\$1649
LZR 965 printer (9ppm, 8mb @ 600dpi)	\$2549
LZR 1560 printer (15ppm, 4mb @ 400dpi)	\$3149
LZR JOLT Clr .Printer PS (1ppm, 6mb @ 300dpi)	\$5649

* Postscript level 2 RISC processor with a SCSI port
** 220V Printers Available



*Orders over \$2500.00 shipping to destinations in the continental U.S.A. qualify for **FREE** ground shipping. Certain restrictions apply.
Ask your sales rep for more details.

MICROTEK

ScanMaker II w/ Adobe Photoshop LE	\$889
ScanMaker IIXe w/ Adobe Photoshop FV	\$1189

UMAX®

UC - 630 with Adobe PhotoShop™ v2.0.1	\$1139
UC - 840 with PhotoShop™ v2.0.1	\$1449
UC - 1200S with Adobe PhotoShop™ v2.0.1	\$2989
Transparency / Slide Scanner Option	\$689
Automatic Document Feeder	\$489

DAYSTAR

FastCache Quadra (700 & 900) - 128K	\$249
FastCache Quadra (700, 900 & 950) - 128K	\$389
PowerCache 33MHz OR w/ FPU	\$539/\$659
PowerCache 40MHz OR w/ FPU	\$749/\$909
PowerCache 50MHz OR w/ FPU	\$1079/\$1319
PowerCache Adaptors*	\$42
* Additional on all PowerCache cards except for Ilci	



COMstation One	\$149
COMstation Two	\$249
COMstation Four	\$349
COMstation Five	\$449
PowerModem I	\$149
PowerModem II	\$249
PowerModem III	\$349
PowerModem IV	\$379

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- Apple/Macintosh products have a **ONE** year warranty only through Mac&PC USA, Inc. We are not an Apple Authorized Dealer.
- Prices, Terms and Availability subject to change without notice.
- Product names in this advertisement are TM or ® of their respective companies.
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Ikegami

CT-20D Sony Trinitron

Bundled with E-Machines 8 bit Futura SX accelerator board	\$2499
Bundled with E-Machines 24 bit Futura MX accelerator board	\$2799

SONY®

1320 - 14" Color Trinitron	\$379
1304S - 14" Color Trinitron	\$669
1604S - 16" Color Trinitron	\$1089
* Includes MAC Adaptor	



PS - 860 (Hammerhead)	\$4199
CS210/CS230	\$4499/\$7199

HARDWARE THAT FITS



“My experience in running large retail organizations for more than 16 years was the person at the top normally heard from customers only when things ‘had not gone according to Hoyle’ somewhere down the line. I would like to be the exception and bring to your attention my experiences of outstanding service from two of your employees during my recent purchase of a RealTech 19” monitor and RasterOps 24XLI card...their responsive service was a refreshing change.”

— Stephen E. Snider

Monitors: all sizes, types, and prices.

	Price	Tube type	640 x 480	640 x 870	832 x 624	1024 x 768	1152 x 870	Auto-syncing	Anti-glare	Mac on-board compatible
A. Radius 21" Color	\$3,069	Hitachi								
RasterOps 21" Color	2,799	Hitachi								
B. RealTech 21" Mono/Grayscale	795	—								
C. SuperMac (SuperMatch) 21"	2,529	Hitachi								
SuperMac 21" Mono/Grayscale	989	—								
D. RasterOps 20" Trinitron Multi-Mode	\$2,329	Trinitron								
Radius Precision Color 20"	2,389	Trinitron								
RasterOps 20" Hitachi Color	1,469	Hitachi								
E. RealTech 20" Trinitron Multi-Mode	1,895	Trinitron								
F. SuperMac 20" (SuperMatch)	1,499	Hitachi								
SuperMac 20" (SuperMatch Dual-Mode)	2,499	Trinitron								
G. NEC 17" 5FG Color	\$1,589	Toshiba								
RasterOps 16" (RasterOps Sweet 16)	1,249	Panasonic								
H. RealTech 17" (RealTech Multi-Mode)	995	Hitachi								
I. Sony 17"	1,189	Trinitron								
J. Seiko 17" (1760)	1,149	Trinitron								
K. Radius Precision Color Pivot (15")	\$959	Non-Trinitron								
L. RealTech 15" Grayscale	449	—								
M. Seiko 14" Color 1445	479	Trinitron								
N. Sony 13" Color	689	Trinitron								

Monitors



PowerBooks



These PowerBook 160s and PowerBook 180s each include: 8 Mb of RAM, expandable to 14 Mb; display with 16 grayscale levels; 1.4 Mb floppy disk drive.

PowerBook® 160

25 MHz 68030. Supertwist display. 40, 80, or 120 Mb hard drive.

PowerBook 160 with 8/40 \$2639
PowerBook 160 with 8/80 2999
PowerBook 160 with 8/120 3359

PowerBook® 180

33 MHz 68030 FPU. Active matrix display. 80 Mb hard drive.

PowerBook 180 with 8/80 \$4319
PowerBook 180 with 8/120 4679

POWERBOOK MEMORY UPGRADES & ACCESSORIES

PowerBook 160 & 180 Memory Upgrades (6/8/10) \$289/409/499
PowerBook 210 & 230 Memory Upgrades (4/8/12) 279/559/809
Auto Power Adapter 89

Charger/Reconditioner 169
Auxiliary Power Pack 169
Radius PowerView 509
PowerBook Battery 79

The PowerBook Duo 210 8/80 and PowerBook Duo 230 8/80 transform into a desktop computer by using the optional Duo Dock. Each PowerBook Duo 210 or 230 includes:

- 640 x 400 Supertwist liquid crystal display with 16 grayscale levels
- 8 Mb of RAM, expandable to 24 Mb
- EverWatch Battery Saver technology
- Optional internal modem

PowerBook® Duo 210 8/80

\$2,529
Lease: \$69/month

25 MHz 68030 microprocessor. 80 Mb hard drive.
All PowerBooks listed here are equipped with a 19mm trackball.

PowerBook® Duo 230 8/80

\$2,889
Lease: \$79/month

33 MHz 68030 microprocessor. FPU, 80 Mb hard drive.
PowerBook Duo 230 with 8/120 \$3249

POWERBOOK MODEMS

Global Village PowerPort Gold/Silver/Bronze \$459/399/209
MassMicro FM 24/96 PB 189
Zoom Pocket Modem 119

POWERBOOK CARRYING CASES

Leather Attache (A) \$139
SuperBrief Double-sided Carryall (B) 79
Companion Case (C) 59



Accelerators

DO YOU FEEL THE NEED FOR SPEED?
CALL US, AND WE'LL MATCH YOU
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TransWarp LC (50 MHz w/50-FPU) ... 1319
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1.44 SuperPlus Drive 279
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33 MHz Accelerator \$529
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FastCache for Quadra 700/900/950 ... 389
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TokaMac IICi \$1259
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Quadra 700 Overdrive \$259
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Radius Rocket 25i \$1239
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Your one-stop source for Mac solutions.

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Asanté 10T Hub/8 (Ethernet concentrator)

Lets you use inexpensive unshielded twisted-pair (UTP) telephone wire instead of expensive coaxial cable for local area networks.

10Base-T Hub/8\$265



Asanté EN/SC (SCSI-to-Ethernet adapter). For Macs without available slots.

EN/SC\$339

Asanté MacCon 3 Ethernet card. Auto-matically configures to media used.

MacCon 3 Card.....\$216

TechWorks GraceLAN Update Manager

GraceLAN for 50 Users\$285

We carry a full line of Asanté and Dayna cards.

DaynaPORT E/II-T NuBus Card

Connects Mac II computers to thick, thin, fiber optic or 10Base-T Ethernet cable systems.

Includes an RJ-45 jack for 10Base-T wiring.

DaynaPORT E/II-T NuBus Card\$149

DaynaPort E/Z. Ideal for Macs that don't have a slot for a network interface card.

DaynaPORT E/Z\$269

Dayna EtherPrint

Divides your network into multiple zones.

Dayna EtherPrint.....\$335

Dayna EtherPrint Plus....\$439



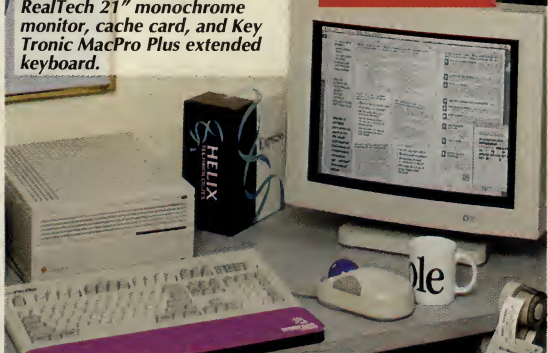
Systems Configured to your specifications

Here are a few of the systems/workstations we sell. We'll let you mix and match your choice of components.

**Macintosh IIfx
Business Solution**
Macintosh IIfx with 5 Mb of RAM, 212 Mb hard drive, RealTech 21" monochrome monitor, cache card, and Key Tronic MacPro Plus extended keyboard.

\$4,169

Lease: \$114/month



\$2,729
Lease: \$77/mo.
**Mac IIsi Solution
with Seiko 14" Color Monitor**



Macintosh IIsi with 5 Mb of RAM, 120 Mb hard drive, Seiko 14" Trinitron monitor, and Key Tronic MacPro Plus extended keyboard.

\$7849

Lease: \$215/month

Quadra 700/Trinitron Intermediate Graphics Solution

Quadra 700, 8 Mb of RAM, 520 Mb hard drive, RealTech 20" Trinitron monitor w/PaintBoard Li and Key Tronic MacPro Plus extended keyboard.

Hours: 8 am-7 pm Central Standard Time

30-DAY MONEY-BACK GUARANTEE. Before returning merchandise, call our Customer Service Dept. toll-free to receive a returned merchandise authorization number (RMA), which must be included with any products you return. No C.O.D. returns, please. Thank you for your cooperation. ALL PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. Hardware That Fits is located at 610 S. Frazier in Conroe, Texas 77301.

Scanners

FAX: 1-409-539-4141
CALL: 1-409-760-2400

Toll-free tech support:
1-800-364-MACS

Flatbed desktop scanners for 24-bit color, 8-bit grayscale, and black/white images. Ideal for mid-range output or position prints for mockups/presentations.

	Price	DPI	Brightness & Contrast levels	Scanning area	Flat art	Transparencies	Slides	Software
MICROTEK								
Scanmaker II Includes ScanMatch color calibration software	\$909	600	14	8.5 x 14	■			Includes limited version of Adobe Photoshop
Scanmaker IIXE Includes ScanMatch color calibration software	1,179	600	14	8.5 x 11	■			Includes full version of Adobe Photoshop
Scanmaker 1850 Slide Scanner	1,569	1850	14	2.5 square inches		■		Includes full version of Adobe Photoshop
REALTECH								
Scan 800 Optional Adobe Photoshop	\$1,199 200	800	200	8.5 x 11.75	■			Includes Scan-Match color calibration software
Scan 800 with Transparency Option	1,695	800	200	8.5 x 11.75	■	■	■	
UMAX								
UC 630	\$1,179	600	51	8.5 x 14	■			Includes full version of Adobe Photoshop
UC 840	1,289	800	51	8.5 x 14	■	■		Includes full version of Adobe Photoshop
Transparency Option	729	(800)	(51)		■	■	■	
UC 1200S	3,179	1200	51	8 x 11.8	■	■	■	Includes full version of Adobe Photoshop
Transparency Option	729	(1200)	(51)		■	■	■	



The photo above is a 300 dpi image of an 8 x 10 transparency. It was scanned on the RealTech Scan 800 with Transparency Option, then adjusted with ScanMatch and color-corrected with Adobe Photoshop.

Scanners & Printers

Laser printers

The right printer can do wonders for your productivity. Do you need speed? Adobe PostScript Level 2? Do you need to print a lot of pages each month?

NEC Silentwriter Model 95

Lease: \$40/month

300 dpi
6 pages/min.
2 Mb RAM (expandable to 5 Mb)

Adobe PostScript Level 2
Motorola 68000 processor

6,000 pages per month
Built-in envelope feeder & 250-sheet tray; optional 2nd tray available in letter or legal sizes

No SCSI port
Appletalk RS-422, parallel, and RS-232C

35 Micro-fine toner and NEC's patented "Sharp Edge" technology create sharp black print quality

NEC

400 dpi
4 pages/min.
4 Mb RAM (expandable to 16 Mb)

PostScript compatible
Weitek XL-8220 processor

3,500 pages per month
Optional 2nd paper drawer

Optional SCSI port
Appletalk RS-422, parallel, RS-232C

35

RealTech Laser

300 dpi
9 pages/min.
2 Mb RAM (expandable to 10 Mb)

Adobe PostScript Level 2
Weitek RISC processor

5,000 pages per month
Optional 2nd paper tray & cassette feeder are available for \$250 (for both)

SCSI port
Appletalk RS-422, parallel, and RS-232C

35 ATM font rendering technology builds raw type characters 4 to 5 times faster, enabling the RealTech Laser to print complex documents faster than other printers in its price range.

RealTech Laser

300 dpi
16 pages/min.
2.5 Mb RAM (expandable to 10.5 Mb)

Adobe PostScript Level 2
Weitek RISC processor

25,000 pages per month
Optional 2nd paper drawer

Optional SCSI port
Appletalk RS-422, parallel, and RS-232C

35

Texas Instruments

300 dpi
9 pages/min.
1.5 Mb RAM (expandable to 4.5 Mb)

Adobe PostScript Level 1
Motorola 68000 processor

10,000 pages per month
Optional 2nd paper drawer and envelope feeder

Optional SCSI port
Appletalk RS-422, parallel, and RS-232C

17 Available with 35 resident fonts (\$1349)

Texas Instruments

Choice of 300 or 400 dpi
15 ppm (letter size); 8 ppm (tabloid size)
4 Mb RAM (expandable to 16 Mb)

Adobe PostScript Level 2
Weitek RISC processor (and ATM font rendering technology)

20,000 pages per month
Two paper trays included (one tray for letter size; one tray for tabloid size.)

SCSI port
Three interface ports: Appletalk RS-422, IBM PC parallel, and RS-232C.

35

RealTech Laser 400

600 dpi
8 ppm (letter size); 4.6 ppm (tabloid size)
12 Mb RAM (expandable to 32)

Adobe PostScript compatible
Intel 80960CA RISC processor

10,000 pages per month
Optional 2nd paper cassette

SCSI port
Optional Ethernet
39 fonts

QMS 860 Hammerhead

600 dpi
8 ppm (letter size); 4.6 ppm (tabloid size)
12 Mb RAM (expandable to 32)

Adobe PostScript compatible
Intel 80960CA RISC processor

10,000 pages per month
Optional 2nd paper cassette

SCSI port
Optional Ethernet
39 fonts

QMS 860 Hammerhead

600 dpi
8 ppm (letter size); 4.6 ppm (tabloid size)
12 Mb RAM (expandable to 32)

Adobe PostScript compatible
Intel 80960CA RISC processor

10,000 pages per month
Optional 2nd paper cassette

SCSI port
Optional Ethernet
39 fonts

Dpi
Engine speed
RAM

Interpreter
Microprocessor

Duty cycle
Paper trays

SCSI port
Interfaces

Resident fonts
Misc.

QMS
We offer dozens of printers, including the QMS line...too many to show in this ad! If you don't see what you want listed here, please call us.



Jeanne is thrilled that she can print proofs of her company newsletter on tabloid-size paper. No more tiling!

"...be forewarned: PostScript-clone printers still have a long way to go before they can rival true Adobe PostScript printers."

Quote from MacUser September 1992 issue. "Personal PostScript Printers" by Bruce Fraser.

★★★★★ MACWORLD MAGAZINE September 1992

1-800-258-2622 1-800-CLUBMAC 1-800-258-2622

FEATURING



SyQuest
REMOVABLE
TECHNOLOGY

- ClubMac 44mb (SQ-555)
- ClubMac 44mb Internal
- ClubMac 44mb Dual
- ClubMac 88mb (SQ-5110)
- ClubMac 88mb Internal
- ClubMac 88mb Dual

Note: The ClubMac 88c will read and write 44mb cartridges but will not format them.

- \$389 **NEW** ClubMac 88c (SQ-5110-C) \$619
- \$369 **NEW** ClubMac 88c Internal \$599
- \$729 **NEW** ClubMac 88c Dual \$1149
- \$489 44mb Cartridge QTY 1: \$64
- \$469 88mb Cartridge QTY 10: \$62
- \$899 88mb Cartridge QTY 1: \$99
- QTY 10: \$96

Quantum

Unformatted Capacity	Model	Access Time	Actual MAC Capacity	Internal	External
Go•DRIVE (2.5" HARD DRIVES DESIGNED FOR NOTEBOOKS)					
80mb	GO80	17ms	80mb	\$325	\$425
120mb	GO120	17ms	120mb	\$455	\$555
ELS SERIES (3.5" LOW PROFILE AND LOW POWER)					
42mb	ELS42	19ms	40mb	\$185	\$245
85mb	ELS85	17ms	82mb	\$239	\$299
127mb	ELS127	17ms	124mb	\$309	\$369
170mb	ELS170	17ms	160mb	\$345	\$405
LPS SERIES (3.5" LOW PROFILE)					
240mb	LPS240	10ms	234mb	\$519	\$579
525mb	LPS525	10ms	500mb	\$1049	\$1109
ProDRIVE SERIES (3.5" HALF HEIGHT)					
425mb	PRO425	9ms	406mb	\$899	\$959
700mb	PRO700	10ms	670mb	\$1249	\$1309
1.0GIG	PRO1050	10ms	1001mb	\$1529	\$1689
1.2GIG	PRO1225	10ms	1165mb	\$1699	\$1759

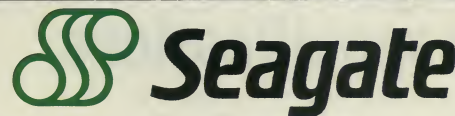
ELS, LPS, and ProDrive Series carry a TWO Year Warranty. Go•Drives carry a ONE Year Warranty.

Maxtor

Unformatted Capacity	Model	Access Time	Actual MAC Capacity	Internal	External
7000 SERIES (3.5" LOW PROFILE)					
120mb	7120S	15ms	121mb	\$299	\$359
207mb	7213S	15ms	202mb	\$439	\$499
LXT SERIES (3.5" HALF HEIGHT)					
330mb	LXT-340	15ms	324mb	\$639	\$699
535mb	LXT-535	12ms	510mb	\$989	\$1049
XT-8000 AND PANTHER SERIES (5.25" FULL HEIGHT)					
645mb	XT-8760S	16.5ms	639mb	\$1179	\$1279
1.2GIG	PO-12S	13ms	997mb	\$1485	\$1585
1.7GIG	P1-17S	13ms	1433mb	\$1749	\$1849

Maxtor 3.5" drives carry a ONE Year Warranty. Maxtor 5.25" drives carry a TWO Year Warranty.

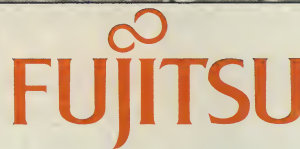
ELITE SERIES



Unformatted Capacity	Model	Description	Access Time	Actual MAC Capacity	Internal	External
3.5" Disk Drives						
248mb	ST3283N	Low Profile	12ms	235mb	\$599	\$659
1.2GIG	ST11200N	Half Height	10.5ms	1000mb	\$1769	\$1829
Wren and Elite Series (5.25" Full Height)						
645mb	ST4767N	W-Runner II	11.9ms	634mb	\$1519	\$1619
1.2GIG	ST41200N	Wren-7	15ms	989mb	\$1579	\$1679
1.6GIG	ST41651N	Wren-8	15ms	1350mb	\$1909	\$2009
2.1GIG	ST42100N	Wren-9	12.9ms	1900mb	\$2129	\$2229
1.6GIG	ST41600N	Elite-1	11.5ms	1307mb	\$2069	\$2169
2.4GIG	ST42400N	Elite-2	11ms	2050mb	\$2949	\$3049
3.4GIG	ST43400N	Elite-3	11ms	2750mb	\$4129	\$4229

Seagate drives carry a ONE Year Warranty.

FIVE YEAR WARRANTY



Unformatted Capacity	Model	Description	Access Time	Actual MAC Capacity	Internal	External
425mb	M2623FA	3.5" Half Height	9ms	405mb	\$965	\$1025
520mb	M2624FA	3.5" Half Height	9ms	496mb	\$1025	\$1085
1.2GIG	M2266	5.25" Full Height	14.5ms	1029mb	\$1579	\$1679
2.0GIG	M2652	5.25" Full Height	14.5ms	1665mb	\$2679	\$2779

HEWLETT-PACKARD

Unformatted Capacity	Model	Access Time	Actual Mac Capacity	Internal	External
3.5" HALF HEIGHT DRIVES					
234mb	C2233	12.6ms	223mb	\$799	\$859
422mb	C2235	12.6ms	402mb	\$1049	\$1109
1.2GIG	C2247	10.5ms	1000mb	\$2069	\$2129
5.25" FULL HEIGHT DRIVES					
1.2GIG	97558	13.5ms	1020mb	\$1719	\$1819
1.6GIG	97560	13.5ms	1292mb	\$2149	\$2249
2.4GIG	CP3010	11.5ms	2000mb	\$3129	\$3229

HP Hard Disk Drives carry a five year warranty

CLUBMAC TAPE BACKUP SYSTEMS

Capacity	Model	Description	Media	Internal	External
155mb	Teac MT2ST/N50	Analog	CT600N	\$469	\$489
600mb	Teac MT2ST/F50	Analog	CT600F	\$679	\$699
2.0GIG	ARDat	DAT, DDS	4mm	\$1219	\$1239
2.0GIG	WangDAT 1300XL	DAT, DDS	4mm	\$1249	\$1269
3-5GIG	WangDAT 3200	DAT, DDS-DC	4mm		\$1489
2.0GIG	HP 35470A	DAT, DDS	4mm	\$1329	\$1349
3-5GIG	HP 35480A	DAT, DDS-DC	4mm	\$1529	\$1549
2.2GIG	Exabyte EXB-8200	Digital/Helical	8mm		\$1859
5.0GIG	Exabyte EXB-8500	Digital/Helical	8mm		\$2849

Tape BackUp Systems include RetroSpect v.1.3c Backup Software, ONE cartridge and ONE Year Warranty.

CLUBMAC OPTICAL DRIVES

Model	Capacity	Description	Seek	External
CMO-OD3000	Teac	128mb	3.5" Half Height	45ms \$1049
CMO-LF3004	Panasonic	128mb	3.5" Half Height	45ms \$1129
CMO-3100E	Ricoh	128mb	3.5" Half Height	45ms \$1089
CMO-5031E	Ricoh	594/652mb	5.25" Full Height	28ms \$2399
Tahiti II	MaxOptix	650/1.0GIG	5.25" Full Height	35ms \$3269
128mb Cartridge		3.5" Single Sided		\$39
594/652mb Cartridge		5.25"-512/1024 bytes/sec		\$99

All ClubMac Opticals include ONE cartridge and ONE Year Warranty.

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(Classic, SE, LC, SE/30, II, IIfx, IIfx, IIfx, IIfx, Performa)

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40 MHz PowerCache	\$559 *	\$649 *
50 MHz PowerCache	\$729 *	\$859 *

NEW 33MHz Turbo 040 \$1429

Cache Option for Turbo 33 (128K) \$359

PowerCache Adapter \$41

* Cache Adapter not included

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FastCache IIsi with 68882	\$349
FastCache IIsi	\$215
FastCache 040 (128K - Q700/900)	\$259
FastCache 040 (128K - Q700/900/950)	\$399
Equalizer LC	\$169 w/FPU \$239

EXPANSION BOARDS

DualPort IIsi	\$165
PowerMath LC	\$115



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256 VRAM \$Call

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4mb X 8 - 80ns \$124

16mb X 8 - 80ns \$540

Mac IIfx

1mb X 8 - 80ns \$33

4mb X 8 - 80ns \$130

16mb X 8 - 80ns \$Call

PowerBook 140/170

4MB Memory Module \$234

6MB Memory Module \$324

PowerBook 160/180

8MB Memory Module \$387

10MB Memory Module \$469

Duo 210/230

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8MB Memory Module \$634

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Sportster 2400 Mac & Fax \$189

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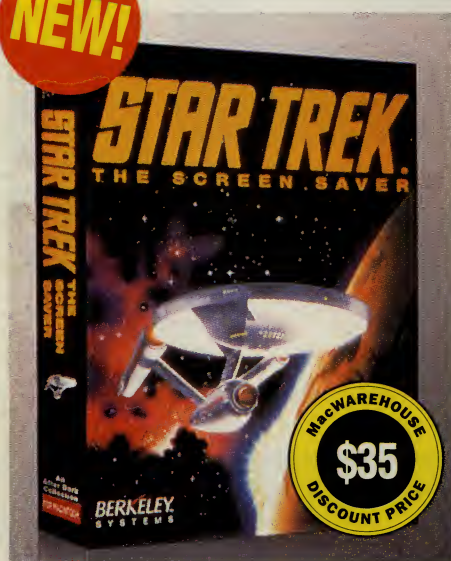
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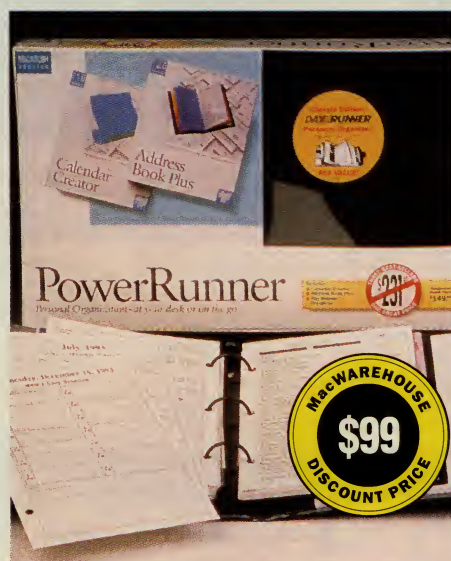
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(ASD) "It's about as much software-based security as you can get in one package." *MacUser*, March 1992. *FileGuard* 2.7 protects your hard drives and partitions from unauthorized access and (including security bypass with a system disk), copying and erasure. With it you can protect your applications and files/folder (including the System Folder) from unauthorized access, deletion, and illegal copying. *FileGuard* protects your Desktop from alterations by unauthorized users, and will even keep an eye on system usage with its system users log. System 7.0 compatible. Rated 5 mice from *MacUser*. **UT10135 FaxFACTS 6806**



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(Leader Technologies) *File Synchronization*. If you use more than one Mac (*PowerBook* or desktop), *PowerMerge* is a convenient, yet powerful program that makes sure you are always working on the latest version of your files on both Macs. Select any combination of files, folders or disks to be synchronized without rearranging your files and *PowerMerge* automatically updates exactly the items you have chosen in the future. *PowerMerge* shows you which files and folders are going to move before they do, notifies you of conflicts if files have changed on both Macs since updating and creates a Log File of which files were updated. Works via network or removable media. Sys. 6 & 7. **UT10312 FaxFACTS 6635**



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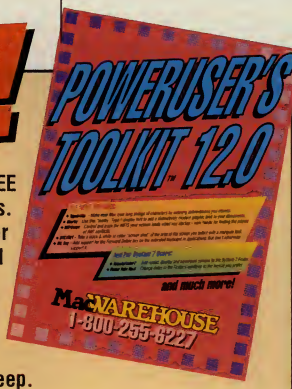
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The Maxtor 7213 from APS

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*Prices and specifications subject to change without notice. Refused orders subject to restocking fee.

*All our hard drives include brackets, cables, cords and LEDs required for operation with the specified Macintosh. All hard drives from APS Technologies come preformatted with Apple's System 7.0.1 software, at least 9.2 MB of compacted publicly-distributable software, and APS Technologies' ALLIANCE POWER TOOLS SCSI formatter/hard disk partitioner.

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127	329	399
170	369	429
Ask about our new low-profile portable enclosure		

Fujitsu		
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2.0G	2595	2695
Includes Fujitsu's 5-year warranty		
Ask about our \$69 extended-life PowerBook Battery		
Go•Drives		
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Toshiba		
830	\$1099	\$1169
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Maxtor		
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535	999	1079
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Desktop and portable units
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• Prices and specifications subject to change without notice. Refused orders subject to restocking fee.

• All our hard drives include brackets, cables, cords and LEDs required for operation with the specified Macintosh. All hard drives from APS Technologies come preformatted with Apple's System 7.0.1 software, at least 9.2 MB of compacted publicly-distributable software, and APS Technologies' ALLIANCE POWER TOOLS SCSI formatter/hard disk partitioner.
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C 120 MB	3.5" LPS, 2 yr warr, 150,000 MTBF	\$318	\$378
C 170 MB	3.5" LPS, 2 yr warr, 150,000 MTBF	\$338	\$398
C 212 MB	3.5" LPS, 2 yr warr, 150,000 MTBF	\$468	\$528
C 540 MB	3.5", 8.5 ms, 4500 RPM, 2 yr Warr,	\$1098	\$1148

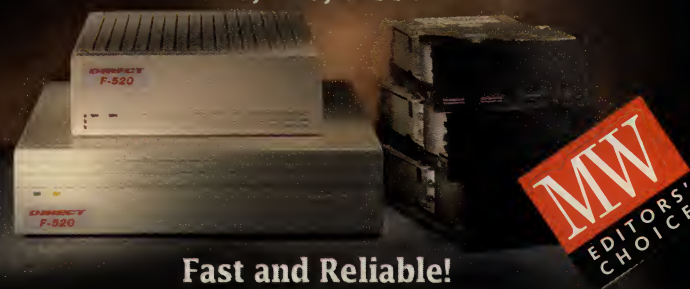
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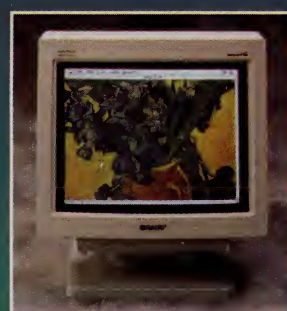
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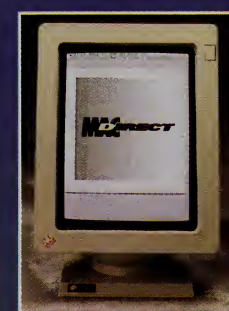
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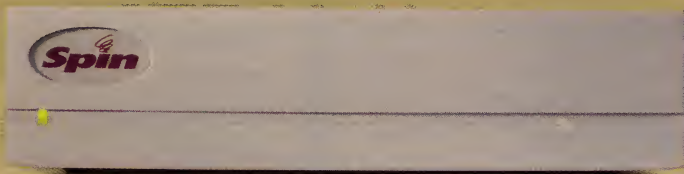
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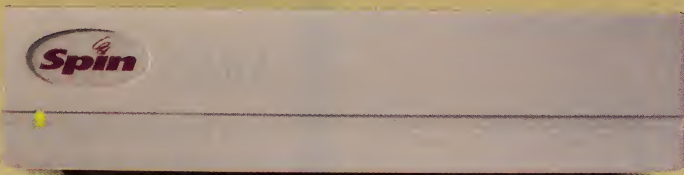
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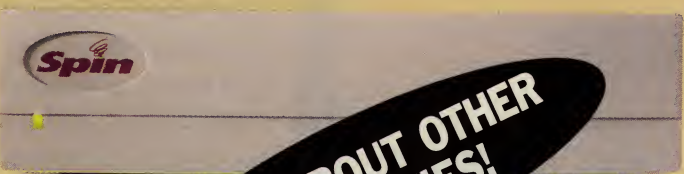
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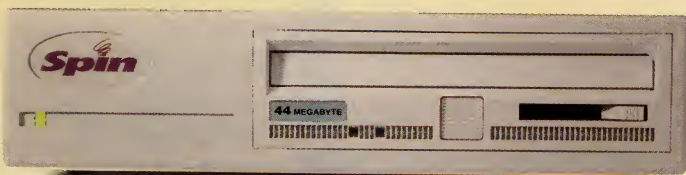


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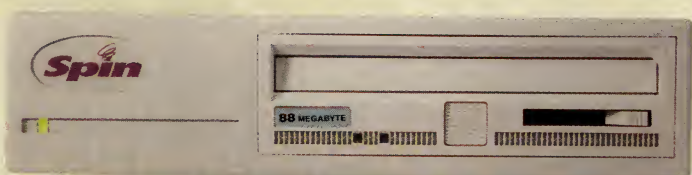


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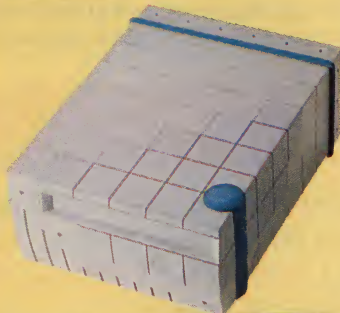
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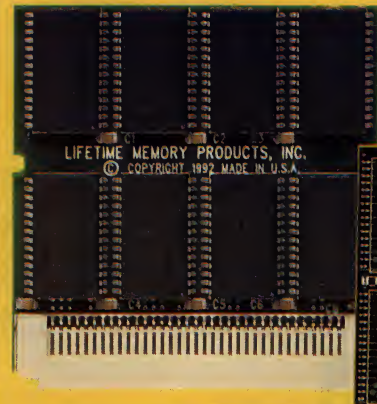


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 - Boards
 - General
 - Computer Systems
 - Networking
 - Peripherals
 - Used Equipment
 - 127 Software**
 - Bar Coding
 - Business Management
 - Education
 - General
 - Graphics
 - Multimedia
 - 128 Special Services**
 - General
 - Graphics
 - Programming/Consulting
 - Rental/Leasing
 - Repair/Recovery Services
 - Toner Recharging
 - 129 CD Rom**
 - 130 Accessories**
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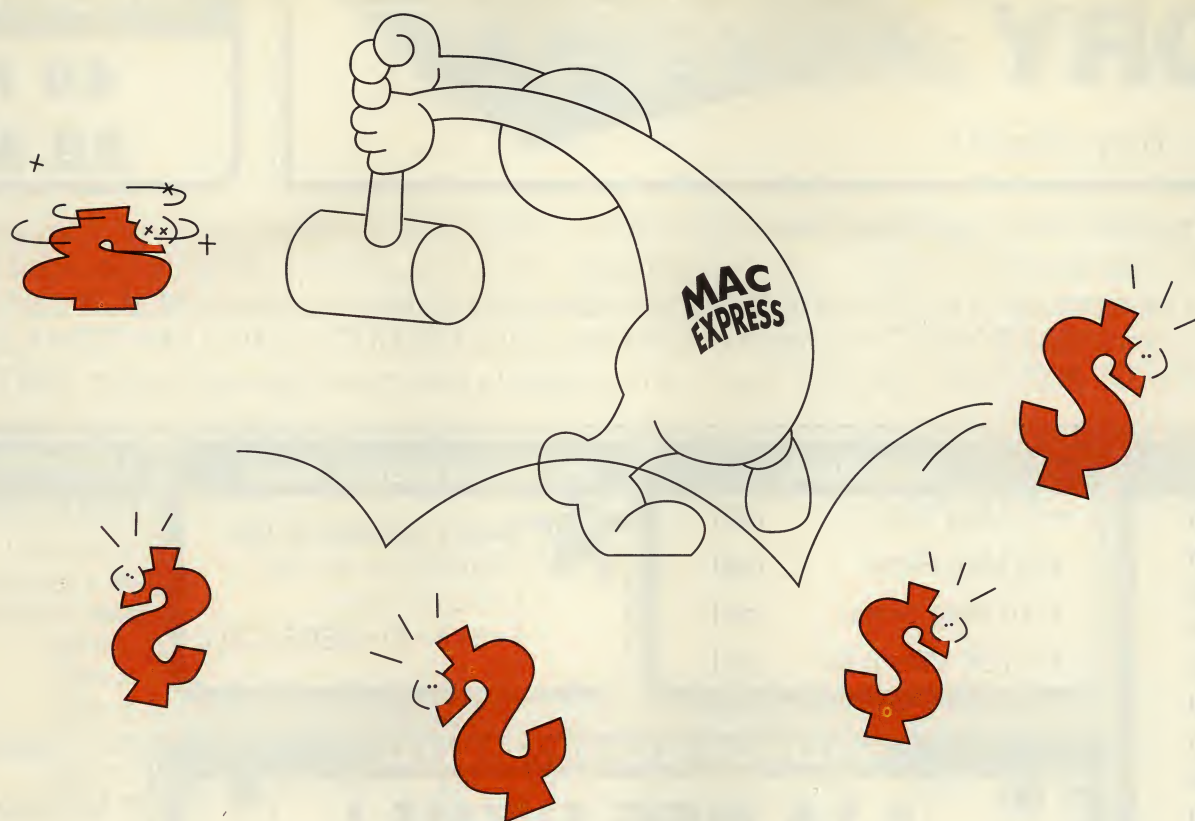
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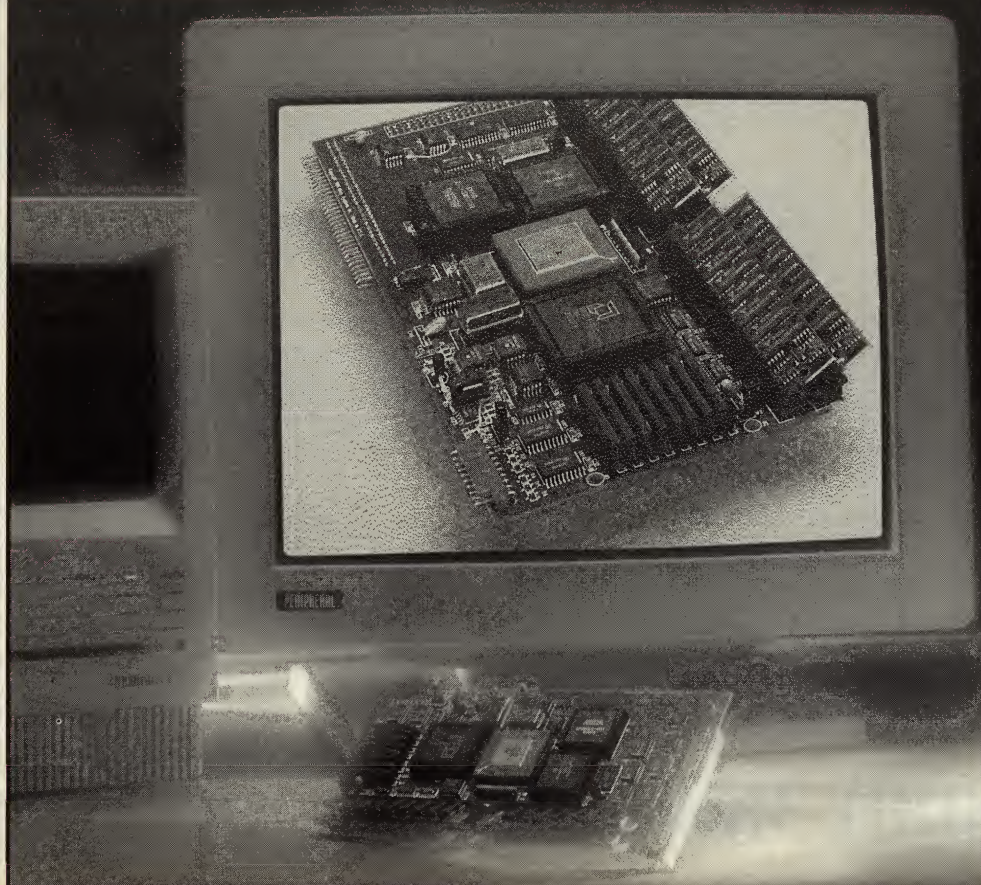
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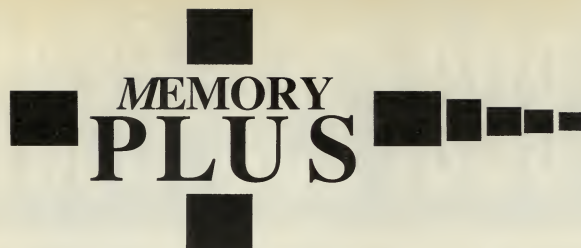
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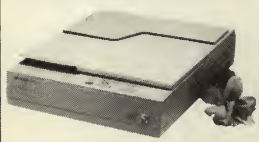
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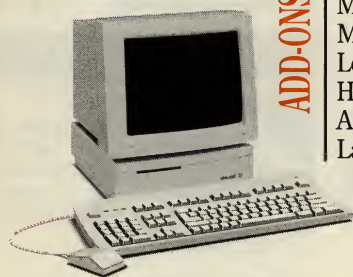
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v.22bis 2,400 bps modem (9,600 with data compression). Complete package includes Macintosh software and cable.	
SupraFAX Modem Plus 2,400	199
2,400 bps Modem/9,600 send-receive FAX. v.42bis data compression for up to 9,600 bps data in a low-cost package. Includes STF Technologies and MicroPhone 1.7 software and cable.	
SupraFAX Modem v.32 9,600	299
9,600 bps Modem/9,600 send-receive FAX. v.42bis compression for up to 38,400 bps data. Includes STF Technologies and MicroPhone software & cable. Performance at low-cost.	



SupraFAX Modem 14,400 \$349

SupraFAX Modem v.32bis 14,400	349
14,400 bps Modem/14,400 send-receive FAX. v.42bis compression for up to 57,600 bps data. Includes STF Technologies and MicroPhone software & cable. Complete. Why pay more?	

Ethernet & LocalTalk

Asanté Print 349
An inexpensive Ethernet-to-LocalTalk converter that easily connects one or two LocalTalk peripherals to an Ethernet network. With no switches to set or installation software to load, it is smart enough to work right out of the box. Two configurations, Thick/Thin or Thick/10BaseT.

LocalTalk Connectors - 3-pack 29
LocalTalk Connectors - 10-pack 89
Our LocalTalk connectors provide you with a cost-effective alternative to more expensive models. Fully PhoneNet compatible. Includes a 4' RJ11 extension cord and terminator.



Asanté MacCon3 - 64K 199
The 3-in-1 (Thick, Thin and 10BaseT) Ethernet card for most expandable Macintoshes including the IIx and SE/30. Not available for the LC or LCII.

Asanté MacCon+ - 64K 159
Economical, 64K high-performance Ethernet for almost every model of Macintosh. Select either Thick/Thin or Thick/10BaseT. The Asanté MacCon+ models for the LC, LCII and IIx each have a socket for a co-processor.

Asanté FriendlyNet Adapters 79
Designed to work with the new Apple Ethernet cabling system - a plug-and-play networking system which makes Ethernet connectivity as simple and easy as LocalTalk.

Asanté 10BaseT Hub/8 239
An economical way to expand your Ethernet network using unshielded twisted pair wiring (10BaseT).

Asanté 10BaseT Hub/12 479
A more sophisticated and larger version of the Asanté 8-port Hub. The most economical way to expand your Ethernet network using unshielded twisted pair (UTP, 10BaseT). Fully supports IEEE specifications.

AsantéHub 1012 479
A 12-port, intelligent 10BaseT hub that offers all the features and benefits of a high-end enterprise hub for a departmental price. Built-in expansion slot for internet-working option cards (optional SNMP in-band module). The RS232 port provides access via remote dial-up, and the RJ45 and RJ21 allows connections for direct-to-computer or punch-down block connections. Multiple hubs can be interconnected via BNC, RJ45 and AUI. Works with AsantéView software (optional) for control either directly or remotely. Out-of-band management for PC's & Macs.



Tribe LocalSwitch 1,999
LocalSwitch is a 16-port intelligent packet-switching hub for Macintosh networks. Using standard LocalTalk protocol and twisted pair wiring, LocalSwitch processes many network transmissions simultaneously.

Until now, network managers have had few alternatives to help them manage their networks: live within the limits of standard LocalTalk or make the leap to the more expensive and complicated Ethernet.

LocalSwitch offers a different solution - reducing network traffic by adding lanes to the highway rather than by increasing the speed limit.

According to MacWEEK, "LocalSwitch can represent a far more cost-effective solution."



\$1,999
Tribe LocalSwitch

CoStar Printers

\$479
CoStar
AddressWriter personal envelope and label printer



AddressWriter Printer 479
It takes only 15 seconds to print a #10 size envelope using the AddressWriter's 144 x 144 impact dot-matrix print head. The AddressWriter can be attached directly to your computer or share on a network with the optional AppleTalk Network Adapter. Holds 100 envelopes or 200 postcards. The optional label feeder will handle a variety of pin-fed labels for added convenience and value. Specify 110 VAC or 220 VAC.

Label Feeder Adapter 75
AppleTalk Network Adapter 189
AppleTalk 5-User Site License 139

\$199 CoStar
LabelWriter II & LabelWriter II Plus
personal label printers



The LabelWriter II and II Plus use direct thermal input technology to produce high-quality labels in a variety of sizes. It takes less than 7 seconds to print a label. The LabelWriter can be attached directly to your computer or share on a network with the optional AppleTalk Network Adapter.

LabelWriter II Mac 199
Handles up to 350 labels per roll. Maximum label size: 1-1/8" x 3-1/2". Prints one label in 3-1/2 seconds.

LabelWriter II Plus Mac 299
Handles up to 700 labels per roll. Maximum label size: 2-1/4" x 4". Prints one label in 3-1/2 to 7 seconds.

AppleTalk Network Adapter 189
AppleTalk 5-User Site License 139

SHARP JX-320 \$1,199

16 Million Color and 256 Grayscale Scanner - 300/600 DPI

An affordable, fine quality, flatbed 8-1/2" x 11", 24-bit color scanner for business and professional applications. Sharp's patented one-pass system ensures high quality color while reducing scan times. 16 million color and 256 grayscale at 600 DPI using Sharp's proprietary algorithm software. By strobing three colored fluorescent bulbs through filters the Sharp system ensures optimal color accuracy and eliminates misregistration.

The Sharp JX-320 is the first color scanner fully compliant with the new SCSI-2 standard which eliminates the need for special drivers and increases software compatibility.

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Sharp JX-320 Color Scanner 1,199
Transparency Option JX-32F3 899

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120 Meg. FreeLance Go•Drive 599
160 Meg. FreeLance Go•Drive Call

Includes your choice of 110V or 220V power supplies and a PowerBook or standard Macintosh SCSI cable.

FreeLance Dock, Battery & Charger 229

This is a complete package, including your choice of 110V or 220V charger, a PowerBook 140-180 compatible battery, transportable power cable and SCSI cable. Use the FreeLance Dock on-the-go or in the office. The battery is interchangeable with the PowerBook's. You can even fully recharge your PowerBook's battery in just 45 minutes while you're working.

FreeLance Options:

PowerBook Battery - 140-180 49
SCSI Cable - DB25M/DB25M 19
SCSI Cable - DB25M/Cent50M 19
Adapter - DB25M/HDI30 19

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1.2 Gig. Sierra

Light-weight and rugged, the Sierra is the affordable and transportable hard disk!



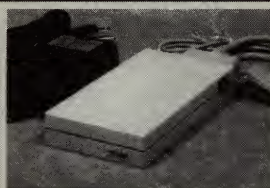
42 Meg. Sierra - Conner, 25 ms. 299
108 Meg. Sierra - Seagate, 15 ms. 359
425 Meg. Sierra - H/P, 12.6 ms. 1,259
1.2 Glg. Sierra - Quantum PDS, 11 ms. ... 1,899

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Small, light-weight, and low power best describes this state-of-the-art drive system. Dimensions 1 x 4 x 8!



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85 Meg. Pocket - Quantum, 17 ms. 329
127 Meg. Pocket - Quantum, 17 ms. 389
170 Meg. Pocket - Quantum, 17 ms. 449

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240 Meg.	ST3283N, 12 ms.	519	579
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5-1/4" Full Height - WREN			
1.0 Gig.	ST41200N, 15 ms. ...	1,439	1,499
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1.9 Gig.	ST42100N, 12.9 ms. ...	1,939	1,999
5-1/4" Full Height - ELITE Ultra-High Performance			
1.4 Gig.	ELITE-I, 11.5 ms.	2,139	2,199
2.1 Gig.	ELITE-II, 11 ms.	3,089	3,149
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Quantum	3-1/2" ELS Low Profile	Internal	External
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127 Meg.	ELS127, 17 ms.	329	389
2-1/2" - Internal for the Mac PowerBook only			
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1.2 Gig.	PD1225S, 11 ms.	1,839	1,899

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210 Meg.	Quantum P210S	559
300 Meg.	WREN ST4350NM	749
320 Meg.	Fujitsu M2622SA	769
330 Meg.	WREN Runner	999
425 Meg.	Seagate ST1481N	839
435 Meg.	Seagate ST2502NM	839
600 Meg.	WREN ST4702NM	979
645 Meg.	WREN ST4766NM	999
660 Meg.	WREN Runner	1,399
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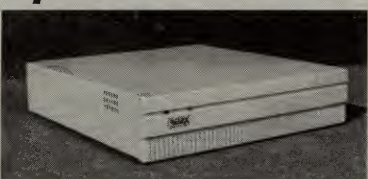
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150 Meg.	DC-6150 Tape Drive	29	25	2/8 Gig.	DAT 4 mm - Data Grade	29	27
250 Meg.	DC-6250 Tape Drive	33	29	2/5 Gig.	ExaByte 8 mm - Data	18	13

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For The PowerBook™			
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IISi/SE/SE/30 Friendly Net/10Base T (16k)	\$239
Maccon + LC EN 10LC to 10Base T	\$169
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- Drives have two year warranty
- Cartridges have one year warranty



Platinum II Performance External Drives

Capacity	Model	ms	External
1.0GB	PD 1000-II	15	\$3,989.00
1.3GB	PD 1300-II	11	\$5,390.00
1.75GB	PD 1750-II	14	\$6,590.00
2.1GB	PD 2100-II	11	\$7,590.00

• Drives have one year CMS warranty



Unformatted Capacity	Model	ms	Int.	Ext.
120MB	7120XT	15	\$339	\$399
207MB	7213	15	\$489	\$549
330MB	LXT-340	15	\$739	\$799
535MB	LXT-535	12	\$1049	\$1109
645MB	XT-8760S	16.5	\$1229	\$1329
1.2GB	PO-12S	13	\$1519	\$1619
1.7GB	PO-17S	13	\$1759	\$1859

- 3.5" drives have one year warranty
- 5.25" drives have two year warranty

Quantum

Unformatted Capacity	Model	ms	Int.	Ext.
42MB	ELS42	19	\$185	\$245
85MB	ELS85	17	\$269	\$329
127MB	ELS127	17	\$329	\$389
170MB	ELS170	17	\$385	\$445
240MB	LPS240	10	\$589	\$649
425MB	PRO425	9	\$899	\$959
80MB	Go•Drive	17	\$329	\$389
120MB	Go•Drive	120	\$459	\$519

- ELS, LPS, PRO drives have two year warranty
- GO-drives have one year warranty



PowerCache	w/o FPU	w/FPU
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Equalizer LC	\$169	\$239
*PowerCache Adapter		\$40
FastCache Cards		
IIsi		\$279
IIsi w/68882		\$349
IIci		\$215
'040 (128k Q700/900)		\$259
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Unformatted Capacity	Model	ms	Int.	Ext.
425MB	M2623FA	9	\$899	\$959
520MB	M2624FA	9	\$1029	\$1089
1.2GB	M2266	14.5	\$1589	\$1689
2.0GB	M2652SA	14.5	\$2585	\$2685

• Drives have five year warranty

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ComStation 1 - External 9600 bps Send/4800 bps Receive Fax. 2400 bps Send/Receive Data Modem.	\$149.00
ComStation 5 - External V.17, 14,400 bps Send/Receive Data Modem with V.32, V.42, V.42 bis, MNPS (Includes Integrated Fax OCK Software.	\$490.00

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42 ELS	\$249	\$249	\$189
85 ELS	299	299	229
120C	339	339	279
127 ELS	379	379	319
170 ELS	425	425	359
240 LPS	599	599	535
425 Pro	989	989	929
TMS Pro R45 • cartridge	included \$425		
TMS Pro R90 • cartridge	included \$529		
T155 Tape Backup • tape	included \$479		
TMS CD ROM	\$499		

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402	425MB	3.5"	12.6ms	14-20Mbit	\$ 1,039 \$ 1,099
1003	1.2GB	3.5"	10.5ms	24-42Mbit	\$ 1,999 \$ 2,079
1029	1.2GB	FH	13.5ms	23Mbit	\$ 1,679 \$ 1,799
1290	1.6GB	FH	13.5ms	23Mbit	\$ 2,079 \$ 2,199
1650	2.1GB	FH	11.5ms	24-42Mbit	\$ 2,679 \$ 2,799
1910	2.4GB	FH	11.5ms	24-42Mbit	\$ 3,079 \$ 2,799

PROLINE

500	520MB	3.5"	12ms	19-24Mbit	\$ 1,069 \$ 1,139
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HEWLETT PACKARD

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170	170MB	1"Hi	17ms	8-12Mbit	\$ 399 \$ 479
240	240MB	1"Hi	16ms	15-30Mbit	\$ 579 \$ 649
502	525MB	1"Hi	10ms	18-38Mbit	\$ 1,129 \$ 1,199
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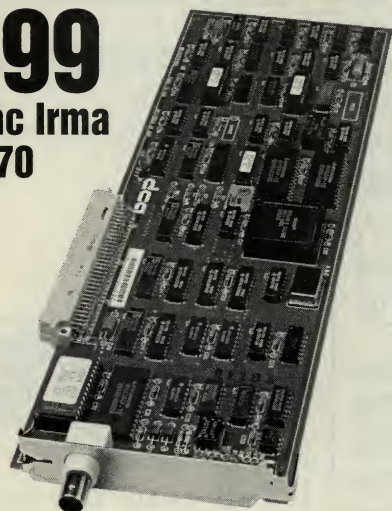
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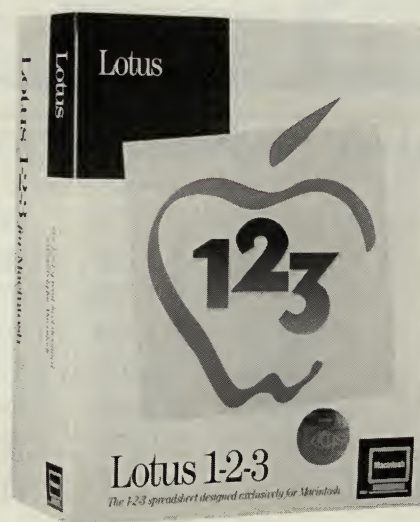
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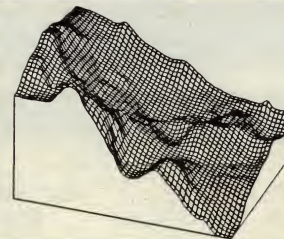
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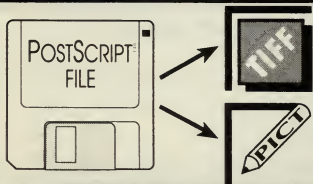
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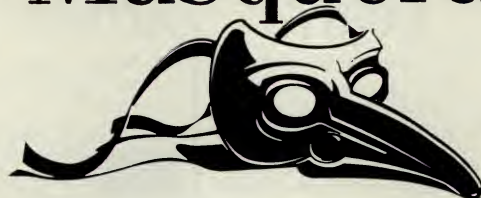
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Heinen

From Page 1

associates said his move was apparently based on several factors, including a fondness for the Northwest where he had previously lived for more than a decade and an "incredible offer" from Microsoft.

Heinen, who joined Apple in 1990 after 17 years at Digital Equipment Corp., was instrumental in launching System 7 and QuickTime and has been guiding the development of other key projects, including an array of system extensions due this year and a new version of the Mac operating system for the PowerPC-based Macs expected in early 1994.

Apple officials downplayed the effect Heinen's departure would have on the company. "Of course this was a surprise, and we will miss Roger, but he has been doing strategy for the last year and now we are in execution mode," said Charlie Oppenheimer, Apple director of Macintosh system software marketing. Spindler reportedly held a series of meetings with system-software engineering teams to reassure them that he plans no drastic

changes in direction.

But several insiders acknowledged that Heinen's vast knowledge of Apple's future direction will be a tactical advantage for Microsoft.

Some observers said third-party Mac developers also have reason to worry.

"This guy was a liaison to Symantec [Corp.] on Bedrock, worked with Borland [International Inc.] on its object-exchange technology and worked with Taligent [Inc.] to hand over the Pink operating system technology, so I think some ISVs (independent software vendors) may have genuine concerns," one source said.

Some observers said Heinen's move appears to be a step down — going from keeper of Apple's crown jewels to just one of five division managers who report to Mike Maples, Microsoft executive



Roger Heinen, shown here in a lighthearted moment during an interview last month about Apple's system-software directions, last week resigned to join rival Microsoft.

vice president of the worldwide products group.

Others said Heinen's new position will be much more strategic and Microsoft's hidden agenda may go beyond the obvious — challenging database giant Borland on the strength of two new products, Access and the recently acquired FoxPro — to fully integrating database functionality into forthcoming multi-user, multitasking operating systems. □

Color

From Page 1

color software and hardware.

ColorSync consists of several different elements: default color-matching algorithms; device profiles for color peripherals; and system-level "plumbing" that links color matching to applications. It also provides hooks so developers can replace the Apple algorithms with their own higher-end color-matching systems.

According to Duane Schulz, Apple director of imaging product marketing, the ColorSync software will be the main selling point for both the color printer and scanner. ColorSync "is where we put our effort" in developing the color printer, Schulz said. Apple "didn't do [its] traditional industrial design job or anything like that" to create the printer.

Indeed, most observers said the new Apple hardware offers little innovation. In particular, many questioned the printer's lack of PostScript or a processor; furthermore, the device is limited to a SCSI port (not a serial interface, as previously described in MacWEEK). Other users expressed reservations about the printer's output quality, citing color banding created by the print head.

Numerous third-party developers announced support for ColorSync. But they and even some Apple officials acknowledged limitations of the current version of the extension.

Although ColorSync lets users apply color matching at the system level, there is no single color standard that would allow users to move files between multiple color-correction systems while maintaining color

fidelity. For example, a ColorSync-equipped Mac using Electronics for Imaging Inc.'s EfiColor software might have problems interpreting color corrections made with Light Source Inc.'s Ofoto application.

Furthermore, the software cannot prevent files corrected with one application from being corrected again with another program; such double correction produces poor results.

Christopher Pearson, principal software engineer with KEPS Inc. of Billerica, Mass., said nonprofessional users of ColorSync "will have a hard time" avoiding such pitfalls. KEPS has added ColorSync support to the latest version of KEPS Precision Color Management System, its high-end color-matching software. Apple is "asking [general color users] to do a lot of work themselves, keeping track of where files came from and where they're going," Pearson said.

Furthermore, Pearson said, high-end users will be frustrated by ColorSync's lack of support for CMYK (cyan, magenta, yellow, black) color correction; the current version supports only RGB (red, green, blue) or CIE XYZ color, and users who want four-color output must export files via custom drivers.

Schulz agreed that Apple needs to address these issues in a future version of ColorSync, and that it would have to take a leading role in coordinating color standards among third-party developers. In its initial release, Apple "wanted to put a stake in the ground by providing the plumbing system as well as basic color management. Now we're going to have to see what people do with it." □

Feb. 10

From Page 1

and one processor direct slot. It will have a floppy drive and space for a removable-media drive plus up to three 3.5-inch hard drives.

The new Quadra, sources said, will come with 8 Mbytes of RAM, expandable to 136 Mbytes, and built-in Ethernet. An 8/230 configuration is expected to list for about \$4,700.

► **Centris 650.** Although it looks like a IIfx, the similarity ends once you get past the Centris 650's metal skin, sources said.

The machine, in its standard configuration, will feature a 25-MHz 68LC040, a version of the '040 lacking the full '040's built-in FPU (floating-point unit). The system reportedly will have three NuBus slots; one PDS; built-in Ethernet; and 4 Mbytes of RAM, expandable to 136 Mbytes. Users will have the option

of ordering the 650 with the full '040, sources said.

A 650 4/230 configuration should retail for about \$2,900. Apple is expected to offer a logic-board upgrade for IIfx owners.

► **Centris 610.** Apple's lowest-cost '040 system will sport a 20-MHz 68LC040. It will have only one NuBus slot, capable of accommodating only a 7-inch NuBus card, sources said. The machine reportedly will cost a miserly \$1,900 for a 4/80 configuration. Ethernet will be available as an option, and RAM can be expanded up to 68 Mbytes.

All three of the new systems will be offered with an optional internal CD-ROM drive. All three incorporate the Quadra 950's fast SCSI controller, although they will have only a single SCSI bus. All three will display eight-bit color on monitors up to 21 inches, sources said. □

New color options coming; LC II to remain

In addition to putting some 68040 models in the middle of its product line, Apple next month will revamp its low end with several new 68030-based color models.

► **Mac LC III** will come in the same case as its older siblings but will offer twice the performance of the LC II, thanks to a 25-MHz '030, a 32-bit data bus and the option of adding a math coprocessor. As previously reported, it will come with 4 Mbytes of RAM, expandable to 36 Mbytes; a processor direct slot; support for up to eight-bit color on a 16-inch screen; and 40-, 80- and 160-Mbyte hard drives. Prices will start at less than \$1,500, sources said.

► **Color Classic** will have an integrated 10-inch color monitor and a logic board with the same specifications as the LC II: a 16-MHz '030, one PDS and no math coprocessor. It is expected to retail for about

\$1,400 in a 4/80 configuration.

► **Color notebook.** Apple's first color PowerBook, the 165c, also will make its debut next month (see MacWEEK, Jan. 4).

Apple reportedly has decided to keep the LC II in its product line at reduced prices. The reason, sources said, is that it outsells all other Mac models, including the PowerBooks; it is especially hot in the K-12 market. Apple reportedly sold almost a million LC IIs last year, and as one source put it, "Why kill a product when customers obviously still want it?"

Apple is expected to reduce the price of the LC II to about \$1,000 for a 4/40 configuration. For LC II users, an LC III logic-board upgrade will be about \$500.

To make room for its new low-cost '030 products, Apple is expected to start phasing out the IIfx and IIsi this month. — By Andrew Gore

Trojan horse surfaces on BBS

By Henry Norr

Ann Arbor, Mich. — A new Trojan horse that could destroy user data surfaced this month.

The program, named CPro 1.41.sea, claims to be a new version of Compact Pro, the shareware compression utility. When launched, it reformats any floppy in drive 1 and attempts, apparently unsuccessfully, to reformat the user's start-up hard drive volume, according to developers of anti-virus software. The file appeared on the Armageddon bulletin board system here and has since been cited on one other local BBS.

Jeffrey Shulman, author of the

shareware VirusDetective utility, said the destructive program can be identified by a 312-Kbyte snd resource called "log jingle." According to Central Point Software Inc., the digitized sound comes from the Ren and Stimpy cartoon series.

Shulman is sending a search string for the Trojan horse to registered VirusDetective owners. Central Point last week released strings enabling its Central Point Anti-Virus program to detect and delete the file. Symantec Corp. delivered a new virus definition for SAM 3.0 and 3.5, and Datawatch Corp. updated Virex to Version 3.9. □

Apple aims low-end lasers at Japan show

Apple will be getting personal next month with two new laser printers reportedly headed for a Tokyo Macworld Expo debut.

In a break with Apple tradition, sources said, the \$1,200 LaserWriter Select 310 and \$900 LaserWriter Select 300 will use a 5-page-per-minute, 300-dpi Fuji Xerox engine instead of a Canon model.

► **The Select 310** reportedly will include Adobe PostScript Level 1 as well as serial and parallel ports for cross-platform connectivity. It also features an AMD 29200 RISC chip running on 1.5 Mbytes

of RAM, expandable to 5.5 Mbytes, and it will include Apple's PhotoGrade enhancement software for gray-scale images.

► **The Select 300** is a QuickDraw model that lacks the RISC chip of the pricier Select 310 and includes only a serial interface.

Both models will support background printing and come with Apple's new GrayShare file-sharing software. Each will ship with a 250-sheet paper cassette; a 500-sheet cassette and a multipurpose paper tray will be optional. — By Matthew Rothenberg

Expo

From Page 1

ShareView Plus and NUTS Technologies Ltd.'s Hello 918.

For many show goers, the remote screen-sharing feature of these systems drew more interest than the flashy videoconferencing windows. "I think collaborative computing is a very big deal," said Thomas Cullen, manager of partnering at Radish Communications Systems Inc., a telecommunications company in Boulder, Colo. "The applications are tremendous, such as long-distance learning and R&D."

► **Wireless.** Also on the cutting-edge communications front was wireless technology.

"My lobbyist clients can't be on the ground searching for a phone jack," said Gary Bolin, owner of Macenterprises in Little Rock, Ark. "They need specific database information about legislators, like what their favorite

whiskey is, instantly." Bolin said Motorola Inc.'s \$1,350 wireless InfoTAC modem along with RadioMail Corp.'s forthcoming PowerBook interface software would be "just the ticket." Operating at 800-MHz radio frequency, the modem will let users send and receive data at 4,800 bps or use a second mode to connect to Motorola and IBM Corp.'s Ardis network for messaging services.

► **Network management.** Show goers looking to tame burgeoning networks had several new network-management tools to choose from, including Dayna Communications Inc.'s Network Vital Signs with new support for routers and Caravelle Networks Corp.'s NetWorks network monitoring and alert software with new support for SNMP (Simple Network Management Protocol) and Novell IPX (Internetwork Packet Exchange) protocols.

Startup

From Page 1

When the IIsi had finished downloading the disk image to a 2-Mbyte RAM disk, it completed the smile and started up normally from the system now in RAM.

Apple has yet to incorporate the technology in a product, so a price and ship date are not set.

Sonic Systems Inc. also implemented network booting in The Diskless Mac, which shipped last year. But Apple's system will work on any AppleTalk network, not just the Internet Protocol networks Sonic supports, Torres said.

Torres said the primary markets for Network Startup are educational and business sites where exactly or nearly identical copies of system software are used.

An administrator will be able to create multiple system images to meet the needs of a variety of users. Torres said preference files could permit users to load their designated

system when logging on from any Mac on the network.

To reduce network traffic at sites where a large number of Macs are simultaneously started up, the Network Startup Server could broadcast system software publicly. Macs starting up then could listen to the network and retrieve the software; if they start listening after a broadcast has begun, they simply wait until it begins again. As a result, an entire classroom of Macs could start up at once without each Mac waiting in line for its system.

The Mac Classic and more-recent models already include the ROM code necessary to start up from a Network Startup Server once a system extension similar to the Startup Disk control panel enables the function. Older CPUs may be able to use Network Startup by beginning the start-up process from a special floppy disk, looking to a specially configured network interface card or loading start-up code from an external SCSI device. □

► **Cross platform.** "The more files I can move from one platform to another, the happier a camper I'll be," said show goer Ed Sox, representative at Esco Associates Inc., a Sunnyvale, Calif., electronic sales company.

Users like Sox got an eyeful of cross-platform products. Echo Logic showed off its PowerPC porting technology by running the Finder, HyperCard and Mac WordPerfect on an IBM RS/6000 workstation. Some visitors to the Apple booth did a double take when they saw a Compaq 486 33M PC running Ofoto for Windows. It was printing to a LaserWriter Pro, of course. Claris Corp.'s booth had a Dell 486 machine powering ClarisWorks for Windows. Claris also showcased FileMaker Pro for Windows. The ultimate platform blender was Insignia Solutions Inc., which showed SoftPC for Windows running on a number of workstations, including an SGI Iris Indigo as well as a Quadra 950.

► **Photo CD.** Eastman Kodak Co.'s booth featured a suite of Photo CD consumer devices and Mac photo-manipulation and cataloging software; third parties such as SuperMac Technology also had a lot of Photo CD products.

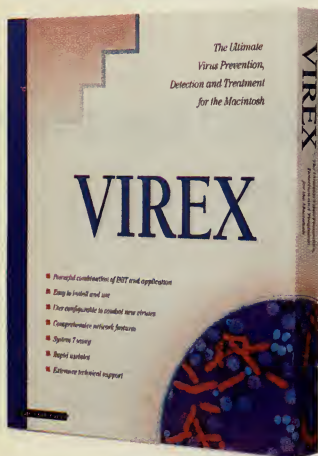
"Photo CD is an easy way for me to get photos digitized," said Marvin Van Dilla, photographer and president of ImageFlo Productions in Berkeley, Calif. "I can then bring them up in Photoshop, retouch them, manipulate them and output the photos to whatever I like, usually 35mm slides."

► **System software.** Apple once again staged a system-software showcase. This time there were no major breakthroughs, but the number of third parties planning products based on upcoming system extensions had grown appreciably since the last expo. Particularly noticeable were tools for AppleScript, including WindowScript with AppleScript, an interface-builder tool from Heizer Software, and Main Event's Scriptor script editor and debugger. □

Advertiser index

adambyte	83
AEC Software	18
Agfa	84
Agfa Compugraphic	73
Aldus	20-21, 32-33
APS	103-105
Asanté	29
Boxlight	83
Cayman Systems	79
Chinon America	50
Club Mac	100-101
CRA	126
Cypress Research	83
DataViz	62
Datavatch/Microcom	132
Dayna Communications	31
DayStar	2
Deneba Systems	5
Digital Eclipse Software	84
Eastman Kodak	77
Educational Resources	83
Educorp	129
ExperVision	11
Farallon	9
Focus	39, 41-44
GDT Softworks	83
Hardware That Fits	98-99
Hatnet	84
Hewlett-Packard	7, 26-27, 68-69
IMS	124
Kensington Microware	24
La Cie	87-92
Lotus	23
Mac & More	86
Mac & PC	96-97
Mac Center	112
Mac Express	115
Mac Outlet	108
Mac Sale International	121
MacDirect	106-107
MacWarehouse	102
MacZone	85
Mass Microsystems	25
Maxtor	15
Memory Direct	116
Memory Plus	118
Micronet	19
Motorola/Embarc	55
NEC Technology	12-13, 37
No Hands Software	82
ON Technology	134
Pacer	66
Peripheral Outlet	117
PLI	74
PSI Integration	48
RasterOps	60-61, 135
Relax Technology	122-123
Seiko	17
Shiva	136
Sigma Designs	51
Sophisticated Circuits	84
Spin Peripherals	109
SuperMac	35
Syex	94-95
Symantec	59
Synergy Software	83
Technology Works	113
The Alliance Group	72
The Cobb Group	53
The LLB Company	110-111
Third Wave Computing	93
Umax	81
Videx	84
Xante	84

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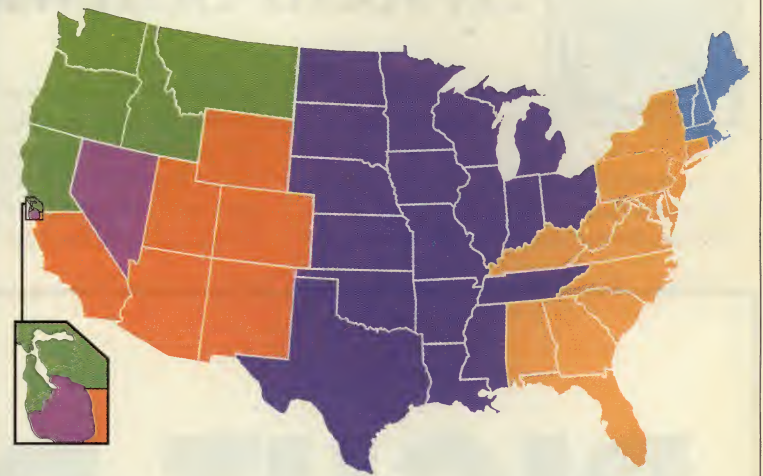
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Products mentioned in this issue

COMPUTERS & SYSTEM SOFTWARE		NETWORKS		RasterOps CorrectPrint 300	
Apple AOCE, AppleScript, QuickDraw GX	134	Banyan Vines 5.5	4, 28	Tektronix Phaser IISD	38
Apple Apple Internet Router, AppleTalk Internet Router 2.0, X.25 Wide Area Extension, IP Wide Area Extension	4	Caravelle Networks NetWorks	1	3M Rainbow Color Proofing System	38
Apple AppleShare Server 3.0.1	75	Cayman GatorBox EX	4, 28	PROGRAMMING TOOLS	
Apple AppleTalk Remote Access (ARA)	52	Cayman GatorShare	28	Heizer WindowScript	1
Apple Centris 650, Color Classic, Macintosh LC II and III, PowerBook 165c color notebook, Macintosh IIfx and IIfx, Quadra 800	1	Dantz Restrospect Remote	75	Main Event Scripter	1
Apple Finder 7	1, 80	Dayna DOS Mounter, DOS Mounter Plus, NetMounter	8	Symantec THINK Reference 2.0	16
Apple Network Startup for Macintosh	1	Dayna Network Vital Signs	1	Xplain MacTech, MacTech CD-ROM, MacTutor	16
Apple PowerBooks	49, 54, 56	Engage ExpressRouter-ISDN, SyncRouter-ISDN	30	SCANNERS & OCR	
Claris HyperCard	1	Euronis Planet-ISDN adapter	30	Apple Color OneScanner	1
NuTek 33-MHz 68030 Mac-compatible logic board	3	Farallon Timbuktu for Macintosh	75	Light Source Ofoto for Windows	1
DATABASES		Helios EtherShare	75	SOUND & MUSIC	
ACI US 4D Compiler 2.0, 4D Insider, 4D xREF	14	Microcom Carbon Copy	77	Macromedia MacRecorder Sound System Pro	40
Claris FileMaker Pro for Windows	1	Miramar MacLAN Connect Gold, Connect F/P, F/P Lite and Connect Lite	28	STORAGE	
Component Software FileFlex	6	Novell DataClub	28, 76	Chinon CDA-535, Series 100, Series 300 CD-ROM drives	14
Mainstay Phyla	4	Novell NetWare for Macintosh	4, 75	Iomega Bernoulli MultiDisk 150, Mac Floptical, MacInsider drives	8
Tactics Heavy Duty Tactician, Tactician 3.0, Tactician with Buttons	8	ON STATUS*Mac 3.0	63	Procom 200 Mbyte internal drive for PowerBook, macCD/MX and macCD Player, macCD Station II, MicroMD external drives, MRD-80C and SQ5110C SyQuest drive	6
DESKTOP PUBLISHING & TYPOGRAPHY		OST MacSnet adapter	30	Toshiba TXN-3401E multisession CD-ROM drive	6
Apple ColorSync	1	Powercore Network Scheduler 3	4	SYSTEM ENHANCEMENTS	
Multi-Ad Multi-Ad Creator 3.5, Multi-Ad Search 2.0	36	Security Dynamics ACE/Server	54	Brainstorm Accelerator for the SE	8
Quark Quark Publishing System (QPS)	34	Sonic Systems The Diskless Mac	1	Orange Micro OrangePC MS-DOS coprocessor cards	16
GRAPHICS HARDWARE		SunSelect MacTOPS	75	Procom Nu32 SCSI Enabler NuBus coprocessor card	6
SuperMac PhotoSpeed, PhotoSpeed Pro kits	6	Vicom Vicom Pro, MultiTerm, Runtime	30	TELECOMMUNICATIONS	
GRAPHICS SOFTWARE		NUMERIC TOOLS & CHARTING		cc:Mail Remote for Mac 2.0	28
Computer Associates CA-Cricket Draw III	34	MathSoft Mathcad 3.1	14	Compression Labs Cameo Personal Video System video conferencing	1
HSC Kai's Power Tools (KPT)	71	ORGANIZATIONAL TOOLS		Motorola InfoTAC wireless modem	1
Macromedia Action!, MacroModel, Three-D	40	Field Integration Field Assistant	8	Northern Telecom Visit Video video conferencing	1
Pantone ColorUp	16	Mainstay MarcoPolo	4	NUTS Hello 918 video conferencing	1
PixelCraft ColorAccess	70	POWERBOOK UTILITIES & ACCESSORIES		ShareVision ShareView Plus video conferencing	1
Spyglass Dicer 2.0	6	Asanté Mac PCMCIA, MiniENSC	49	US Robotics Courier 28.8 Kbps. modem upgrade	6
INPUT DEVICES		Cayman GatorLink ARA	52	UTILITIES	
Apple Adjustable Keyboard, Desktop Bus Mouse II	3	Global Village ARA server	49	AIsoft DiskExpress II	75
MONITORS & DISPLAY CARDS		Inline Inline Sync	63	Fifth Generation CopyDoubler	18
BMUG MacVGA adapter	75	Leader PowerMerge	63	Logical Solutions 7th Heaven, Chameleon	18
James Engineering MacVGA and MacComp adapters	75	No Hands Magnet	64	Mountain Lake MakeTest 2.0	18
Mitsubishi Diamond Pro 14	75	Palomar On the Road	6	SoftPC SoftNode, Entry-Level SoftPC, SoftPC Professional 3.0, Universal SoftPC 3.0	16
Nanao Flexscan 9065S, MDC-57 adapter	75	Qdea Update!	63	SoftPC SoftPC for Windows	1, 16
NEC MultiSync 3FGx and 3FG, Mac II cable adapter	75	Symantec Norton Essentials for PowerBook	66	Symantec Norton Utilities for Mac	75
nView ViewFrame Spectra C	36	Xanatech ShuttlePilot	63	Vision CameraMan 2.0	18
Panasonic Panasync C1395	75	PRINTERS & PRINTING TOOLS		WORD PROCESSING	
Sharp QA-1650 color LCD projection panel, QA-BL1 backlight unit	36	Apple Color Printer, LaserWriter Pro 600 and 630, LaserWriter Select 300 and 310, StyleWriter II	1	WordPerfect WordPerfect	1
Sony CPD-1304S	75	Dupont 4CAST	38		
Taxan MultiVision	75	Eastman Kodak XL 7700, XLT 7720	38		
MULTIMEDIA		GCC ColorTone	38		
Imospace Kudo Image Browser	36	GCC ColorSync profiles, SelectPress 600, WideWriter 360 enhancements	4		
Specular Infini-D	34	JVC SP2200	38		
Truevision Bravado24	34	Mitsubishi S3600-30U, S6600-30U, Shinko ColorStream/DS	38		
VideoFusion VideoFusion	34	Nikon CP 3000	38		
		Seiko Personal ColorPoint PSE	36		
		Seiko Professional ColorPoint PSH	36, 38		
		Sharp JX-7000	38		
		Sony UP-D7000	38		
		SuperMac ProofPositive Full-Page, Two-Page	38		

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Looking ahead



Issue date	Special section Product Watch	Close for Display ads, MarketCenter, Career Opportunities	Close for Ad Showcase
Jan 25	CAD	Jan 14	Jan 12
Feb 1	GW Spec. Rpt. Manufacturing tools	Jan 21	Jan 19
Feb 8	Graphics	Jan 28	Jan 26
Feb 15	GA Spec. Rpt. Modems	Feb 4	Feb 2
Feb 22	Presentations	Feb 11	Feb 9
March 1	Mapping software	Feb 18	Feb 16
March 8	GW Spec. Rpt. Database add-ons	Feb 25	Feb 23
March 15	Scanners	March 4	March 2



By now everyone has safely recovered from last week's tribal gathering in that winter wonderland the locals call San Francisco. A little rain (OK, a lot of rain) had very little effect on those attending the expo because for

the first time in years it was self-contained at one site, thanks to the long-anticipated completion of the Moscone Center expansion. Of course, that meant a lot of first-time showgoers were cheated out of the experience of navigating the tortured urban path over to

Brooks Hall, located in the euphemistically named Civic Center. Thus they also were cheated out of the chance to experience one of the nation's larger outdoor crack bazaars ...

In honor of the expo, the Knife has chosen this week to offer his own highly valued System

Software Forum update, in which some of the questions you didn't bother to ask because you knew you'd get the runaround are answered. Just remember that the Knife's answers are based solely on information gleaned from a variety of sources, none of whom is particularly anxious to take credit for these contributions.

There's a lot of interest in AppleScript, and according to these sources, the project is in great shape. The software developer's kit is scheduled to ship early in the second quarter, to be followed later by a retail product for in-house scripting. The Knife was unable to verify rumors of a planned end-user package containing lots of example scripts, so this later infoid is passed along without any warranty whatsoever, either expressed or implied.

And here's some good news for those of you growing weary waiting for AOCE (née OCE). If Apple realizes its plan to begin beta testing in February, both client and server most likely will ship in May.

And what of QuickDraw GX? For this system product the news is not so encouraging. The Knife is convinced that the expected summer release now has been rescheduled for later in the year.

PDA surprises. Anytime so much Mac talent, enthusiasm and information is collected in such a small space, the unexpected is inevitable. In the case of Apple's upcoming personal digital assistants, some may be surprised to learn that the first PDA to ship won't be a Newton but a member of the Sweet Pea family. The Knife reports that this handheld multimedia player will be capable of running HyperCard stacks on its tiny one-bit display and also will sport an NTSC video-out port for those with a TV handy. The first Newton, however, should be released before we gather together again in Boston.

Strange days have found us. If you have the ability to retain your wits in large crowds, you sometimes hear things that you never dreamed of. For example, last week the Knife overheard a Claris executive emphatically declare that he would stake the reputation of the company on his promise that MacWrite Pro will ship in March. The Knife generously assumed he meant March of *this* year.

Then there's the even stranger case of Apple PR, which the Knife has always counted among his greatest fans. A handful of reporters opened their expo press kits and found a surprise: the spec sheet for a major upgrade to a popular CPU, one that won't be announced until next month. Perhaps it was just PR's way of confirming reports published weeks ago about the upcoming model.

Judge a book. Early last week the Knife received a report that said volumes about Apple's manufacturing might. A user who purchased a new PowerBook 145 last fall later discovered that inside it was a 140. Apple reportedly is offering to correct its error just as soon as a 145 becomes available, probably in a month or two. □

Is there anything TV's Amy Fisher wouldn't do for a MacWEEK mug? How about you? If you've got the goods there might be a mug for you. This disgusting business begins at (415) 243-3544, fax (415) 243-3650, MCI (MactheKnife), AppleLink (MacWEEK) and CompuServe/ZiffNet/Mac.

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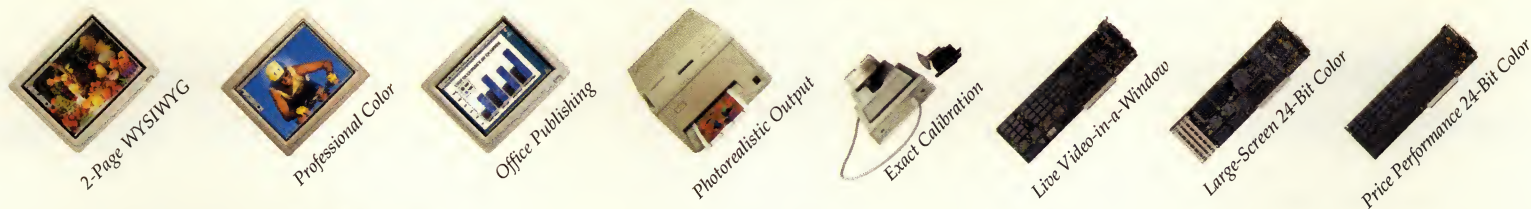
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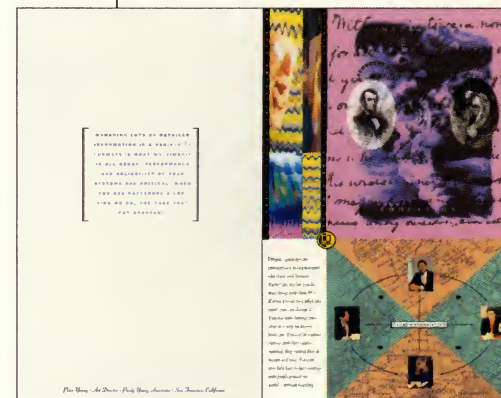


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